

DTIC FILE COPY

Technical Report

CMU/SEI-90-TR-4  
ESD-TR-90-206

②



Carnegie-Mellon University  
Software Engineering Institute

AD-A223 740

## Software Engineering Education Directory

Edited by  
Bill McSteen, Brian Gottler, and Mark Schmick  
April 1990

DTIC  
ELECTE  
JUL 11 1990  
S D

DISTRIBUTION STATEMENT A

Approved for public release;  
Distribution Unlimited

**Technical Report**

**CMU/SEI-90-TR-4**

**ESD-TR-90-206**

**April 1990**

**SEI Software Engineering Education  
Directory**



**Edited by**

**Bill McSteen**

Information Management

**Brian Gottler**

Education Program

**Mark Schmick**

Education Program

Approved for public release.  
Distribution unlimited.

**Software Engineering Institute**  
Carnegie Mellon University  
Pittsburgh, Pennsylvania 15213

This technical report was prepared for the

SEI Joint Program Office  
ESD/AVS  
Hanscom AFB, MA 01731

The ideas and findings in this report should not be construed as an official DoD position. It is published in the interest of scientific and technical information exchange.

#### **Review and Approval**

This report has been reviewed and is approved for publication.

FOR THE COMMANDER

  
Karl H. Shingler  
SEI Joint Program Office

This work is sponsored by the U.S. Department of Defense.

Copyright © 1990 by Carnegie Mellon University.

This document is available through the Defense Technical Information Center. DTIC provides access to and transfer of scientific and technical information for DoD personnel, DoD contractors and potential contractors, and other U.S. Government agency personnel and their contractors. To obtain a copy, please contact DTIC directly: Defense Technical Information Center, Attn: FDRA, Cameron Station, Alexandria, VA 22304-6145.

Copies of this document are also available through the National Technical Information Service. For information on ordering, please contact NTIS directly: National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Use of any trademarks in this report is not intended in any way to infringe on the rights of the trademark holder.

## Foreword

Each spring, the SEI Education Program publishes the *SEI Software Engineering Education Directory*, which summarizes undergraduate and graduate courses in software engineering taught at colleges and universities, primarily in the United States. This annual survey, the only one of its kind, serves as a directory for potential students seeking information about where they might study software engineering. The survey is useful to industry and government recruiters in evaluating the background of job candidates.

The teamwork and energy of Brian Gottier, Bill McSteen, and Mark Schmick, along with Allison Brundand, Linda Levine, Mary Rose Serafini, and Barbara Zayas, were responsible for the successful completion of this edition. Gary Ford, Senior Computer Scientist, helped design this year's edition and spent much time editing entries into final form.

Norman E. Gibbs  
Director of Software Engineering Education  
Software Engineering Institute  
Carnegie Mellon University



Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

# Table of Contents

<b>Introduction</b>	<b>1</b>
<b>Graduate Degree Programs In Software Engineering</b>	<b>3</b>
<b>Schools and Courses</b>	<b>17</b>
<b>United States</b>	<b>21</b>
Alabama	21
Alaska	23
Arizona	24
Arkansas	26
California	27
Colorado	40
Connecticut	42
Delaware	44
District of Columbia	45
Florida	46
Hawaii	50
Idaho	52
Illinois	54
Indiana	59
Iowa	64
Kansas	65
Kentucky	67
Louisiana	69
Maryland	71
Massachusetts	73
Michigan	79
Minnesota	84
Missouri	89
Montana	90
New Hampshire	91
New Jersey	92
New Mexico	94
New York	96
North Carolina	104
North Dakota	106
Ohio	107
Oklahoma	112
Oregon	113
Pennsylvania	115
South Carolina	122
Tennessee	123
Texas	126
Utah	135

Virginia	137
Washington	140
West Virginia	145
Wisconsin	147
Wyoming	149
<b>Australia</b>	<b>151</b>
Victoria	151
<b>Canada</b>	<b>153</b>
Alberta	153
British Columbia	154
Nova Scotia	155
Ontario	156
Quebec	159
Saskatchewan	161
<b>Mexico</b>	<b>163</b>
<b>United Kingdom</b>	<b>165</b>
Scotland	165

# Software Engineering Education Directory

**Abstract:** This directory provides information about software engineering courses and software engineering degree programs offered by universities, primarily in the United States.

The Software Engineering Institute (SEI) is a federally funded research and development center, sponsored by the Department of Defense and operated by Carnegie Mellon University. The mission of the SEI is to serve the public interest by establishing the standard of excellence for the art and practice of software engineering and by accelerating the transition of software technology.

This directory has been compiled to provide information that will help students and their advisors make appropriate educational choices. It contains a detailed listing of available software engineering courses and software engineering degree programs.

*Courses in Australia, Canada,  
Mexico and Scotland are  
also included. (L.F.)*

## Introduction

Compilation of entries for this directory began in the summer of 1986 with a questionnaire mailed to schools selected from Peterson's *Graduate Programs in Engineering and Applied Sciences 1986*. We contacted schools offering graduate degrees in computer engineering, computer science, information science, software engineering, and systems engineering because they seemed most likely to offer courses involving software engineering concepts. The first *Software Engineering Education Directory* was then published outlining these courses from the information provided on the questionnaires.

Since 1986 the directory has been published annually. Coverage has been expanded to include software engineering courses at the undergraduate level as these courses have become more common. Each year we have attempted to collect updated information from institutions previously represented in the directory. We have also attempted to contact institutions not previously included in the directory to make the publication more complete.

This year we have again included a listing of those institutions offering software engineering courses at both the graduate and undergraduate levels. This is the second section of the directory entitled **Schools and Courses**. In addition, we have added a new section profiling institutions that are currently offering master's degrees in software engineering. This is the first section of the directory entitled **Graduate Degree Programs in Software Engineering**.

To discuss any issues related to this report, please contact:

Education Program  
Software Engineering Institute  
Carnegie Mellon University  
Pittsburgh, PA 15213  
Internet: [education@sei.cmu.edu](mailto:education@sei.cmu.edu)





## Graduate Degree Programs in Software Engineering

Graduate degree programs first appeared in the late 1970s at Texas Christian University, Seattle University, and the Wang Institute of Graduate Studies. All three programs responded to significant needs from local industry in the Dallas/Fort Worth, Seattle, and Boston areas, respectively. In 1985, three additional programs were started: at the College of St. Thomas in St. Paul, Minnesota, at Imperial College of Science and Technology in London, and at the University of Stirling in Scotland. The last four years have seen a significant increase in the development of and interest in such programs. We know of at least a dozen programs that either have been initiated or are under development.

In this section, we survey the programs in the United States for which we were able to obtain information. Readers will note substantial variation among the programs. This can be attributed to a number of factors:

- Most of the programs were developed in the absence of any recognized model curriculum.
- Each school had a number of existing courses, mostly in computer science, that were incorporated into the new programs, and these courses differed greatly among schools.
- Software engineering is a new discipline, and the developers of these programs had differing perceptions of the scope of the discipline, and its principles and practices.
- Each school was responding to perceived needs that varied greatly from one community to another.

Another notable point of variation among these programs is the program title. Many of the programs were unable to use the word *engineering* in their titles because of legal or administrative restrictions. In one way, it is unfortunate that the term *software engineering* is so nearly universally accepted as an informal name for the discipline, because it has generated an inordinate amount of argument on the semantic issues of whether (or not) software engineering is really engineering.

The following requirements for each program originally appeared in 1989 *SEI Report on Graduate Software Engineering Education* by Mark Ardis and Gary Ford, Technical Report CMU/SEI-89-TR-21, Software Engineering Institute, Carnegie Mellon University, Pittsburgh, Pa., June 1989.

## **Andrews University**

<b>Location</b>	Berrien Springs, Michigan
<b>Program title</b>	Master of Science in Software Engineering
<b>Degree requirements</b>	48 quarter credits (typically 4 credits per course): 8 credits of projects, 16 credits core courses, 0-20 credits foundation courses, 4-24 credits electives
<b>Foundation courses</b>	Data Structures Data Base Systems Systems Analysis I Systems Analysis II Operating Systems
<b>Core courses</b>	Computer Architecture Software Engineering I Software Engineering II Programming Project Management
<b>Program Initiation</b>	(unknown)
<b>Source</b>	This information was reported to the SEI by Andrews University in April 1989.

## **Boston University**

**Location** Boston, Massachusetts

**Program title** Master of Science in Software Systems Engineering

**Degree requirements** Nine courses of four credits each: seven required courses including a project course, and two electives. Two of the required courses differ depending on whether the student's background is in hardware or software.

**Required courses** Applications of Formal Methods  
Software Project Management  
Software System Design  
Computer as System Component  
Software Engineering Project  
Advanced Data Structures (hardware background)  
Operating Systems (hardware background)  
Switching Theory and Logic Design (software background)  
Computer Architecture (software background)

**Program Initiation** Fall 1989 (The program has existed as a software engineering option in the Master of Science in Systems Engineering since spring 1980; the current curriculum was adopted in January 1988.)

**Source** This information was taken from "The Software Engineering Graduate Program at the Boston University College of Engineering," Brackett, J., Kincaid, T., and Vidale, R. *Software Engineering Education; SEI Conferences 1988*, Gary A. Ford, ed. New York: Springer-Verlag, 1988, 56-63.

Boston University absorbed the Wang Institute's facilities in 1987 and was the beneficiary of some of the experience of the Wang Institute. This program incorporates the best features of the MSE curriculum of Wang and the MS in Systems Engineering from Boston University. The program emphasizes the understanding of both hardware and software issues in the design and implementation of software systems. Special emphasis is placed on the software engineering of two important classes of computer systems: embedded systems and networked systems.

Both full-time and part-time programs are available, and most of the program is available through the Boston University Corporate Classroom interactive television system. The program can be completed in twelve months by full-time students.

The university also has a doctoral program leading to the PhD in Engineering, with research specialization in software engineering.

## **Carnegie Mellon University**

<b>Location</b>	Pittsburgh, Pennsylvania
<b>Program title</b>	Master of Software Engineering
<b>Degree requirements</b>	Sixteen courses: six required courses and two Category I electives in the first year; a theory course, a business course, two Category II electives, two software engineering seminars, and a two-semester master's project in the second year.
<b>Required courses</b>	Software Systems Engineering Formal Methods in Software Engineering Advanced System Design Principles Software Creation and Maintenance Analysis of Software Software Project Management
<b>Elective courses</b>	Category I: Computer science courses at the senior undergraduate level  Category II: Advanced graduate courses in computer science
<b>Prerequisite note</b>	Prospective students must have at least two years of experience working in a sizable software project.
<b>Program initiation</b>	September 1989
<b>Source</b>	This information was reported to the SEI by CMU in June 1989.

The objective of Carnegie Mellon University's MSE program is to produce a small number of highly skilled experts in software system development. It is designed to elevate the expertise of practicing professional software designers. The emphasis is on practical application of technical results from computer science; the nature of these technical results dictates a rigorous, often formal, orientation. The engineering setting requires responsiveness to the needs of end users in a variety of application settings, so the program covers resolution of conflicting requirements, careful analysis of tradeoffs, and evaluation of the resulting products. Since most software is now produced by teams in a competitive setting, the program also covers project organization, scheduling and estimation, and the legal and economic issues of software products.

## **College of St. Thomas**

**Location** St. Paul, Minnesota

**Program title** Master of Software Design and Development

**Degree requirements** Ten required courses, including a two-semester project course sequence, and four elective courses. All courses are three semester credits.

**Required courses** Technical Communications  
Programming Methodologies  
DBMS and Design  
Systems Analysis and Design I  
Software Productivity Tools I  
Software Project Management  
Software Quality Assurance/Quality Control  
Legal Issues in Technology

**Program Initiation** February 1985

**Source** This information was reported to the SEI by the College of St. Thomas in June 1989.

This program was developed through an advisory committee made up of technical managers from Twin Cities companies such as Honeywell, IBM, Sperry, 3M, NCR-Comten, and Control Data. Elective courses are added to the curriculum on the basis of need as expressed by technical managers in local industry or by students in the program.

The program is applied rather than research-oriented. Most instructors are from industry (14 of 23 in the spring 1989 semester). Instead of a thesis, students complete a two semester software project for a local company; in many cases this company is their employer, but the project must not be part of their normal work responsibilities.

Classes are offered evenings, and 98% of students work full-time in addition to their studies. Students normally require three years to complete the degree. The program enrolled 252 students in spring 1989.

## **George Mason University**

<b>Location</b>	Fairfax, Virginia
<b>Program title</b>	Master of Science in Software Systems Engineering
<b>Degree requirements</b>	30 hours of course work in the School of Information Technology and Engineering, including five required courses.
<b>Required courses</b>	Introduction to Software Engineering Formal Methods in Software Engineering Software Requirements, Prototyping, and Design Software Project Management Software Project Laboratory
<b>Elective courses</b>	Five courses, including a second semester of Software Project Laboratory, or three courses and 6 semester hours of master's thesis.
<b>Program Initiation</b>	Fall 1989 (core courses offered beginning Fall 1988)
<b>Source</b>	This information was reported to the SEI by George Mason University in April 1989.

The program for the degree of Master of Science in Software Systems Engineering is concerned with engineering technology for developing and modifying software components in systems that incorporate digital computers. The program is concerned with both technical and managerial issues, but primary emphasis is placed on the technical aspects of building and modifying software systems.

In addition to the degree program, the university offers a graduate certificate program in software systems engineering. The certificate program is designed to provide knowledge, tools, and techniques to those who are working in, or plan to work in, the field of software systems engineering, but do not desire to complete all of the requirements for a master's degree. Students in the certificate program must already hold or be pursuing a master's degree in a science or engineering discipline. The requirements for the certificate are completion of the five required courses listed above.

## **Monmouth College**

<b>Location</b>	West Long Branch, New Jersey
<b>Program title</b>	Master of Science in Software Engineering
<b>Degree requirements</b>	30 credit hours, consisting of 6 core and 4 elective courses.
<b>Core courses</b>	Mathematical Foundations of Software Engineering I Programming-in-the-Large Project Management Computer Networks Software Engineering I System Project Implementation (Laboratory Practicum)
<b>Elective courses</b>	Mathematical Foundations of Computer Science II Programming-in-the-Small Protocol Engineering Selected Topics in Software Engineering Programming Languages Computer Architecture Operating System Implementation Database Management (additional electives are under development)
<b>Program Initiation</b>	1986
<b>Source</b>	This information was reported to the SEI by Monmouth College. Further information was obtained from "Revised Graduate Software Engineering Curriculum at Monmouth College," Amoroso, S., Kuntz, R., Wheeler, T., and Graff, B. <i>Software Engineering Education; SEI Conference 1988</i> , Gary A. Ford, ed. New York: Springer-Verlag, 1988, 70-80.

The program is offered through the departments of computer science and electrical engineering. The current enrollment is more than 100, and to date 50 students have completed the degree requirements.

## **Rochester Institute of Technology**

**Location** Rochester, New York

**Program title** Master of Science in Software Development and Management

**Degree requirements** 48 credits (quarter system; typical course is 4 credits)

**Required courses** Principles of Software Design  
Principles of Distributed Systems  
Principles of Data Management  
Software and System Engineering  
Project Management  
Organizational Behavior  
Analysis and Design Techniques, or  
Analysis & Design of Embedded Systems  
Software Verification and Validation  
Software Project Management  
Technology Management  
Software Tools Laboratory  
Software Engineering Project

**Program initiation** Fall 1987

**Source** This information was reported to the SEI by RIT in April 1989.

The program has approximately 100 students at the RIT campus and 15 students at Griffiss Air Force Base in Rome, New York. Approximately 90% of the students attend part-time.



## Seattle University

<b>Location</b>	Seattle, Washington
<b>Program title</b>	Master of Software Engineering
<b>Degree requirements</b>	45 credits (quarter system), including eight require core courses, four elective courses, and a three quarter project sequence.
<b>Required courses</b>	Technical Communication Software Systems Analysis System Design Methodology Programming Methodology Software Quality Assurance Software Metrics Software Project Management Formal Methods
<b>Elective courses</b>	System Procurement Contract Acquisition and Administration Database Systems Distributed Computing Artificial Intelligence Human Factors in Computing Data Security and Privacy Computer Graphics Real Time Systems Organization Behavior Organization Structure and Theory Decision Theory (other electives may be selected from the MBA program)
<b>Prerequisite note</b>	Prospective students must have at least two years of professional software experience.
<b>Program initiation</b>	1978
<b>Source</b>	This information was taken from "The Master of Software Engineering [MSE] Program at Seattle University After Six Years," Mills, E., <i>Software Engineering Education: The Educational Needs of the Software Community</i> , Norman E. Gibbs and Richard E. Fairley, eds. New York: Springer-Verlag, 1986, 182-200.

Seattle University is an independent urban university committed to the concept of providing rigorous professional educational programs within a sound liberal arts background. In 1977, the university initiated a series of discussions with representatives from local business and industry, during which software engineering emerged as a critical area of need for specialized educational programs. Leading software professionals were invited to assist in the development of such a program, which was initiated the following year.

Normally, classes are held in the evenings and students are employed full-time in addition to their studies. The first students in the program graduated in 1982.

## **Texas Christian University**

<b>Location</b>	Fort Worth, Texas
<b>Program title</b>	Master of Software Design and Development
<b>Degree requirements</b>	36 semester hours, including nine required courses and three electives; submission of a technical paper to a journal for publication.
<b>Required courses</b>	Introduction to Software Design and Development Modern Software Requirements and Design Techniques Applied Design, Programming, and Testing Techniques Management of Software Development Economics of Software Development Computer Systems Architecture Database and Information Management Systems Software Implementation Project I Software Implementation Project II
<b>Program initiation</b>	Fall 1978
<b>Source</b>	This information was taken from "Adapting to Changing Needs: A New Perspective on Software Engineering Education at Texas Christian University," Comer, J.R., and Rodjak, D.J. <i>Software Engineering Education: The Educational Needs of the Software Community</i> , Norman E. Gibbs and Richard E. Fairley, eds. New York: Springer-Verlag, 1986, 149-171.

The university established a graduate degree program in software engineering in 1978. Due to external pressure, prompted by the absence of an engineering college at TCU, the program was given its current name in 1980.

The program offers most of its courses in the evening, and all 50 students in the program are employed full-time in the Dallas/Fort Worth area.

## **University of Houston-Clear Lake**

**Location** Houston, Texas

**Program title** Master of Science in Software Engineering Sciences

**Degree requirements** 36 credit hours, including 30 hours of required courses and 6 hours of electives.

**Required courses** Specification of Software Systems  
Principles and Applications of Software Design  
Software Generation and Maintenance  
Software Validation and Verification  
Software Project Management  
Master's Thesis Research  
Advanced Operating Systems  
Theory of Information and Coding  
Synthesis of Computer Networks

**Elective courses** Must be chosen from courses in software engineering, computer science, computer systems design, or mathematical sciences.

**Program Initiation** Awaiting approval

**Source** This information was reported to the SEI by the University of Houston-Clear Lake in March 1989.

The university has submitted a proposal to the Texas Coordinating Board for Higher Education to offer the master's degree. Approval is expected late in 1989 or early in 1990.

## **University of Pittsburgh**

<b>Location</b>	Pittsburgh, Pennsylvania
<b>Program title</b>	Master of Science in Software Engineering
<b>Degree requirements</b>	33 credits: four required software engineering courses; additional required and optional courses in computer science
<b>Required courses</b>	(these are not the official course titles) Software specification and design Conversion of software specifications into products Models of information systems Software engineering project
<b>Elective courses</b>	Courses in areas such as: Theory of computation Design and analysis of algorithms Language design Advanced operating systems Computer architecture Modeling and simulation Principles of database systems User interface design and evaluation Artificial intelligence
<b>Program initiation</b>	1989
<b>Source</b>	This information was reported to the SEI by the University of Pittsburgh in the Fall 1989.

This program is project oriented, emphasizes a methodological approach to software development, and provides a more focused education than the traditional Master of Science in computer science. Applicants with professional experience may be given special consideration for admission, although such experience is not required. All students' programs are individually designed with the help of a faculty advisor. There is no thesis requirement.

## **The Wichita State University**

<b>Location</b>	Wichita, Kansas
<b>Program title</b>	Master of Science in Software Engineering; Master of Computer Science in Software Engineering
<b>Degree requirements</b>	30 credit hours total: two required courses, six credit hours of software engineering electives, additional electives in software engineering or computer science, and practicum (3 hours) or thesis (6 hours) on a software engineering topic.
<b>Required courses</b>	Software Requirements, Specification and Design Software Testing and Validation
<b>Elective courses</b>	Software Project Management Ada and Software Engineering Systems Analysis Topics in Software Engineering (recent offerings have included Configuration Management, Formal Methods, Quality Assurance, Software Metrics, and Formal Verification of Software)
<b>Program initiation</b>	Spring 1989
<b>Source</b>	This information was reported to the SEI by Wichita State in June 1989.

The Wichita State University Department of Computer Science has created a set of courses that can lead to a specialization in software engineering within the existing Master of Science and Master of Computer Science degree programs. These courses are taught in cooperation with the Software Engineering Institute's Software Engineering Curriculum Project and Video Dissemination Project.



## Schools and Courses

This year, as in the past, we updated course entries by contacting those institutions appearing in the last publication of the directory and requesting that they revise their entries. In addition, we made an effort to increase our coverage of software engineering courses by sending a large number of questionnaires to institutions not represented in past editions. More than 30 institutions represented in this version of the directory appear here for the first time.

We have edited the directory entries for accuracy, completeness, and relevance to software engineering. We are limited in our ability to edit responses, however, and might have included courses in the listings that do not seem to be closely related to software engineering study. However, all such courses were cited as part of a software engineering sequence in the responses that we received. In addition, please be aware that some "Textbook" entries actually contain titles of articles, reports, or other published papers. In such cases, the papers shown are consistently used and considered to be required course reading.

### Changes in the Schools and Courses Section

Changes we adopted this year include:

- **Electronic mail addresses for contacts.** In the questionnaire mailed out this year, we requested that the contact for an institution provide us with his/her electronic mail address. For individuals who provided us with this information, we have included it in their listings.
- **Merging of information into new Tools field.** In previous versions of the directory, we have listed the compilers, computers, and languages used for each course in separate fields. In this edition, this information is merged into one field called **Tools**. This field also includes other software tools used in the course.

### How to Use This Section

The directory is organized by state (in the U.S.), province (in Canada), or country (in other regions). Within each section, the directory entries are alphabetized by institution name. Each entry lists the following:

- **Degrees.** These are the degree programs that have software engineering courses as electives or requirements.
- **Contact.** This is the person you may contact for more information about the software engineering courses offered at the institution.
- **Update.** The month and year that a directory entry was last updated appear here.
- **Courses.** Software engineering and related (co-requisite, laboratory, or advanced elective) courses are listed under this title. Each **Course** has three sub-titles: **Codes**, **Textbooks**, and **Tools**. The **Codes** represent characteristics of the course and are explained in detail later in this section. **Textbooks** contains a listing of texts used for the course, and **Tools** contains a listing of software and hardware used.

### Abbreviations of Degrees

Each degree entry has one or two parts. The first part is the degree; and the second part, if present, is the subject. For example, BCS means Bachelor of Computer Science, BS EE means Bachelor of Science in Electrical Engineering, MSE is Master of Software Engineering, and MA CE stands for Master of Arts in Computer Engineering. The abbreviations used appear on the following page.

**Degrees**

AAS	Associate of Applied Science
AS	Associate of Science
B	Bachelor Degree
BA	Bachelor of Arts
BBA	Bachelor of Business Administration
BC	Bachelor of Commerce
BCS	Bachelor of Computer Science
BE	Bachelor of Engineering
BED	Bachelor of Education
BEECS	Bachelor of Elec. Eng. and Comp. Sci.
BM	Bachelor of Mathematics
BS	Bachelor of Science
BSE	Bachelor of Science and Engineering
BSSE	Bachelor of Systems Science and Eng.
BO	Bachelor Degree (Other)
M	Master Degree
MA	Master of Arts
MCS	Master of Computer Science
ME	Master of Engineering
MED	Master of Education
MEM	Master of Engineering Management
MM	Master of Mathematics
MS	Master of Science
MSAT	Master of Applied Science and Tech.
MSDD	Master of Software Design and Dev.
MSE	Master of Software Engineering
MSSM	Master of Systems Science and Math.
MO	Master Degree (Other)
DENG	Doctor of Engineering
PHD	Doctor of Philosophy
PHD AT	Doctor of Applied Science and Tech.
SCD	Doctor of Science
O	Other

**Subjects**

AI	Artificial Intelligence
AT	Advanced Technology
BA	Business Administration
CAD	Computer Aided Design Tech.
CE	Computer Engineering
CET	Computer Electronics Tech.
CIS	Computer and Information Sci.
	Computer Information Systems
CM	Computer Management
CP	Computer Programming
CS	Computer Science
	Computing Science
CSE	Computer Science Engineering
	Computer and Systems Eng.
	Computer Systems Engineering
CSED	Computer Science Education
CT	Computer Technologies
E	Engineering
EE	Electrical Engineering
IE	Industrial Engineering
	Information Engineering
IS	Information Science
	Information Systems
ISE	Industrial and Systems Eng.
M	Mathematics
	Mathematical Sciences
MIS	Management Information Sys.
SE	Software Engineering
SSE	Software Systems Engineering
SSM	Systems Science and Math.
SYSE	Systems Engineering
SYSS	Systems Science
SYST	Systems Technology
TCS	Teaching of Computer Science
O	Other



## Explanation of Course Codes

A complete **Courses** entry has five codes on the second line, arranged in order of course level, prerequisite, status, frequency, and the number of years that the course has been taught. The last code is self-explanatory. The other four codes are as follows:

### Level:

U Undergraduate  
G Graduate  
B Both  
O Other  
X No information supplied

### Prerequisite:

P The course has at least one prerequisite  
N None  
X No information supplied

### Status:

R Required  
E Elective  
B Both  
O Other  
X No information supplied

### Frequency:

B Biennial  
Y Once a year  
T Once a term  
A Alternate terms  
D On demand  
O Other  
X No information supplied

Following are examples of **Courses** entries containing these fields:

### Information Systems Analysis, Design, and Evaluation (INF SC 272)

Codes: G P E O 6

Textbooks: *Fundamentals of Systems Analysis, 3rd ed.*  
by Fitzgerald, Jerry and Fitzgerald, Arda

Tools: C  
IBM PC  
Mac  
VAX 780  
VAX 8650

### Software Engineering and Software Tools (INF SC 276)

Codes: G P E O 5

Textbooks: *Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.



# United States

## Alabama

---

### Auburn University

College of Engineering  
Department of Computer Science and Engineering  
Auburn University, AL 36849

**Degrees:** BS, MS, PHD

**Contact:** Dr. James H. Cross  
Assistant Professor  
(205) 826-4330

**Update:** September 1988

**Courses:** Introduction to Software Engineering (CSE 422)

**Codes:** U P R A 4

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** IBM PC  
TI Pro  
Exceclerator (InTech)

**Software Engineering I (CSE 522)**

**Codes:** B P E Y 4

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** VAX  
Pascal

**Software Engineering II (CSE 622)**

**Codes:** G P E Y 4

**Textbooks:** *Input Output Requirements Language (IORL) Reference Manual*  
by Teledyne Brown Engineering

**Tools:** IORL  
Apollo

**Software Engineering Environments (CSE 625)**

**Codes:** G N E Y 1

**Textbooks:** *CASE : Computer-Aided Software Engineering*  
by Fisher, Allen

**Tools:** CASE products : TAGS, Exceclerator, HTI-001

---

### University of Alabama at Birmingham

School of Natural Sciences and Mathematics  
Department of Computer and Information Sciences  
Birmingham, AL 35294

**Degrees:** BS, MS, PHD

**Contact:** Dr. Warren T. Jones  
Chairman  
(205) 934-2213

**Update:** February 1988

**Courses:** **Formal Specifications and Software Development (CS 520)**

**Codes:** G N R Y 9

**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.

**Tools:** Sequent Balance 21000  
VAX 11/750  
Ada, Modula-2

**Additional Information:**

Some software engineering content or purpose in other courses, especially:

CS 522 Formal Semantics of Programming Languages (Pagan, F., *Formal Specifications of Programming Languages*, Prentice-Hall, 1981)

CS 526 Program Verification (Manna, Z., *Mathematical Theory of Computation*)

CS 531 Computer Design (Hwang, K. and Briggs, F.A., *Computer Architecture and Parallel Processing*)

CS 535 Computer Communications Network (Schwartz, M., *Computer Communication Network Design and Analysis*)

CS 538 Performance Evaluation (Kobayashi, H., *Modeling and Analysis*)

All of these courses are electives.

---

**University of Alabama at Huntsville**

College of Science

Computer Science

Huntsville, AL 35899

**Degrees:** BS, MS, PhD

**Contact:** Dr. Carl G. Davis  
Chairman

**Update:** January 1990

**Courses:** **Software Engineering (CS650)**

**Codes:** G P E Y 5

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** TAGS, DCDS, MacProject  
Pascal, Ada, C

**Advanced Software Engineering (CS750)**

**Codes:** G P E D 1

**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.

**Software Requirements and Design Methodologies (CS651)**

**Codes:** G P E Y

**Software Testing and Reliability (CS652)**

**Codes:** G N E Y

**Software Management and Quality Assurance (CS653)**

**Codes:** G N E Y

## Alaska

---

**University of Alaska-Fairbanks**  
College of Liberal Arts  
Department of Mathematical Sciences  
Program in Computer Science  
Fairbanks, AK 99775-1110

**Degrees:** BS CS, MS CS

**Contact:** Prof. P. J. Knoke  
Associate Professor of Computer Science  
(907) 474-5107  
User ID: FFPJK@Alaska  
Network: BITNET

**Update:** January 1990

**Courses:** **Software Engineering (CS 401)**  
**Codes:** U N R Y 6  
**Textbooks:** *Software Engineering - A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.  
**Tools:** MacProject II  
various compilers, computers, languages

**Additional Information:**

Software Engineering is basically a project course in which teams of 5 students work on a project with requirements derived from real software development needs in the community. The project covers a 14-week period during which software engineering concepts are introduced through lectures.

## Arizona

---

### Arizona State University

College of Engineering and Applied Science  
Department of Computer Science  
Tempe, AZ 85287

**Degrees:** BS, MS, PHD

**Contact:** Dr. James S. Collofello  
Associate Professor  
(602) 965-3733

**Update:** November 1987

**Courses:** **Software Project Management and Development I (CSC 460)**

**Codes:** U P E T 9

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** VAX (VMS or UNIX)  
Pascal, Ada

**Software Project Management and Development II (CSC 560)**

**Codes:** G P E T 6

**Textbooks:** Selected readings

**Software Requirements (CSC 563)**

**Codes:** G P E Y 6

**Textbooks:** Selected readings

**Software Design (CSC 430/530)**

**Codes:** B P R T 5

**Textbooks:** *Abstraction and Specification in Program Development*  
by Liskov, Barbara and Guttag, John

**Tools:** C  
Sequent Symmetry running Dynix

**Software Testing (CSC 565)**

**Codes:** G P E Y 6

**Textbooks:** Selected readings

**Software Maintenance (CSC 566)**

**Codes:** G P E Y 6

**Textbooks:** Selected readings

**Special Topics in Software Engineering (CSC 590)**

**Codes:** G P E D 6

**Textbooks:** Selected readings

**Compilers and Systems Software (CSC 453)**

**Codes:** B P R Y 1

**Additional Information:**

Textbooks for Special Topics in Software Engineering depend on topic. The topics used in the past have been "Software Metrics" and "Software Environments."

---

University of Arizona

Faculty of Science  
Department of Computer Science  
Tucson, AZ 85721

**Degrees:** BS CS, MS CS, PHD CS

**Contact:** Prof. Gregory R. Andrews  
Department Head  
(602) 621-6613  
User ID: greg@cs.arizona.edu  
Network: Internet

**Update:** January 1990

**Courses:** **Software Design (Computer Science 430/530)**  
**Codes:** B P R T 5  
**Textbooks:** *Abstraction and Specification in Program Development*  
by Liskov, Barbara and Guttag, John  
*The C Programming Language, 2nd ed.*  
by Kernighan, Brian and Ritchie, Dennis  
*The Elements of Programming Style*  
by Kernighan, Brian and Plauger, P.J.  
*The Unix Programming Environment*  
by Kernighan, Brian and Pike, Rob

**Compilers and Systems Software (Computer Science 453)**  
**Codes:** B P R Y 13  
**Textbooks:** *Compilers Principles, Techniques, and Tools*  
by Aho, Sethi & Ullman  
**Tools:** Sequent Symmetry running Dynix  
VAX running Berkeley Unix  
C

**Advanced Topics in Software Systems (Computer Science 630)**  
**Codes:** G P E D 13

## Arkansas

---

### University of Arkansas

Fulbright College of Arts and Sciences  
Department of Computer Science  
Program in Computer Science  
Fayetteville, AR 72701

**Degrees:** BS, MS, BA

**Contact:** Prof. Greg Starling  
Chairman  
(501) 575-6427  
User ID: Starling@UAFSYSB.UARK.EDU  
Network: BITNET

**Update:** February 1990

**Courses:** **Software Development (CSAS 4003)**

**Codes:** U P E D 3  
**Tools:** PL/I, Pascal  
IBM 4381, Macintosh

**Structured Programming II (CSAS 1003)**

**Codes:** U P R Y 3  
**Tools:** Pascal  
IBM 4381, Macintosh

**Ada for Software Design (CSAS 4013)**

**Codes:** U P E D  
**Textbooks:** Ada  
by Salb, Sabina  
**Tools:** IBM 4381/R14, Macintosh  
VM CMS  
Ada



## California

---

**California Institute of Technology**  
Division of Engineering and Applied Science  
Computer Science Option  
Pasadena, CA 91125

**Degrees:** MS CS, PHD CS

**Contact:** Prof. K. Mani Chandy  
Option Representative  
(818) 359-8559  
User ID: Mani@visi.caltech.edu  
Network: Internet

**Update:** January 1990

**Courses:** **Concurrency In Computation (CS 139)**  
**Codes:** B P E O 5  
**Tools:** Message-passing concurrent computers  
UNIX systems  
C

**Computation, Computers & Programs (CS 20)**  
**Codes:** U P E T

**Computer Algorithms (CS 138)**  
**Codes:** B P E T

**Programming Laboratory (CS 140)**  
**Codes:** B P E O

**Additional Information:**

Concurrency in Computation is offered each Winter and Spring quarter. Numerous related courses on Functional Programming, Computer Algorithms, Computer Modeling and Data Analysis, Computer Graphics, Design and Implementation of Programming Languages, Simulation, and Computer-Aided Design, are also offered.

---

**California Polytechnic State University**  
School of Engineering  
Department of Computer Science  
San Luis Obispo, CA 93407

**Degrees:** BS CS, MS CS

**Contact:** Prof. Jim Beug  
Professor  
(805) 546-2824

**Update:** May 1987

**Courses:** **Software Engineering I (CSC 440)**  
**Codes:** U P R O 9  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Software Engineering II (CSC 441)**

**Codes:** U P R O 1

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** Mac II  
Xerox 8010  
Mesa, Modula-2

**Software Tools (CSC 340)**

**Codes:** U P E O 5

**Tools:** Pyramid UNIX  
C, Mesa

**Additional Information:**

Software Engineering I, Software Engineering II, and Software Tools are offered quarterly.

---

**California State Polytechnic University, Pomona**

School of Science  
Department of Computer Science  
Pomona, CA 91768-4034

**Degree:** B CS, M CS

**Contact:** Dr. Bruce P. Hiram  
Chairman  
(714) 869-3440

**Update:** October 1988

**Courses: Advanced Programming (CS 340)**

**Codes:** U P R T 2

**Textbooks:** *Software Development in Pascal*  
by Sahni, Sartaj

**Tools:** Pascal  
IBM PC/XT

**Software Engineering (CS 360)**

**Codes:** U P E O 2

**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady

**Tools:** Irvine Compiler Corporation, Ada  
Integrated Solution workstation

**Additional Information:**

Software Engineering is offered twice a year. Local industry has expressed interest in this course being offered via closed circuit television.

---

**California State University, Chico**

College of Engineering, Computer Science and Technology  
Department of Computer Science  
Chico, CA 95929

**Degree:** BS, MS

**Contact:** Dr. Orlando S. Madrigal  
Professor and Chairman  
(916) 895-8442

**Update:** November 1987

**Courses: Software Engineering (CSCI 210)**

**Codes:** U P E T 3

**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

**Systems Design (CSCI 270)**

**Codes:** U P R T 11

**Textbooks:** *Systems Analysis and Design: Traditional and Advanced Concepts and Techniques*  
by Wetherbe, James C.

**System Design Theory (CSCI 370)**

**Codes:** G P E Y 11

**Textbooks:** *Controlling Software Projects: Management Measurement and Estimation*  
by DeMarco, Tom  
*IEEE Tutorial: Software Management*  
by Reifer, Donald

**Advanced Software Practices (CSCI 251)**

**Codes:** U N E T 11

**Textbooks:** *Programming in Ada*  
by Barnes, John Gilbert Presslie

**Tools:** Ada  
IE J I A T  
Prime 9600

**Software Metrics and Control (CSCI 310)**

**Codes:** G P E O 3

**Software Design (CSCI 311)**

**Codes:** G P E O 3

**Textbooks:** *A Technique for Software Module Specification with Examples*  
by Parnas, D.L.  
*Chief Programmer Team Management of Production Programming*  
by Baker, F.T.  
*Concise Notes on Software Engineering*  
by DeMarco, Tom  
*Data Design in Structured Systems Analysis*  
by Gane, C.P.  
*Fundamentals of Design*  
by Freeman, Peter  
*Go To Statement Considered Harmful*  
by Dijkstra, E.  
*Programming Considered as a Human Activity*  
by Dijkstra, E.  
*The Humble Programmer*  
by Dijkstra, E.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

**Software Analysis and Testing (CSCI 312)**

**Codes:** G P E O 11

**Additional Information:**

Software Metrics and Control, Software Design, and Software Analysis and Testing are offered during the Fall and Spring semesters.

**California State University, Northridge**  
School of Engineering and Computer Science  
Department of Computer Science  
Northridge, CA 91330

**Degrees:** BS, MS

**Contact:** Sally Gamon  
Secretary  
(818) 885-3398

**Update:** May 1987

**Courses: Program Design Techniques (CS 380)**

**Codes:** U P R T 9  
**Textbooks:** *Software Design and Development*  
by Gilbert, Philip  
*Structured Analysis and System Specification*  
by DeMarco, Tom  
**Tools:** Pascal (Turbo, PR1ME)  
AT&T 3B5  
CDC Cyber 170/750  
DEC PDP 11/44  
IBM XT  
Prime

**Software System Development and Laboratory (CS 480)**

**Codes:** U P E T 11  
**Textbooks:** *Software Design and Development*  
by Gilbert, Philip  
**Tools:** Pascal (Turbo)  
AT&T 3B5  
CDC Cyber 170/750  
DEC PDP 11/44  
IBM XT  
Prime

**Software Engineering (CS 580)**

**Codes:** G N R Y 1  
**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.  
**Tools:** Pascal  
AT&T 3B5  
CDC Cyber 170/750  
DEC PDP 11/44  
IBM XT  
Prime (Intech)  
Pro Mod  
Analyst Toolkit (Yourdon), Design Aid (Nastec), Excelsior

**Software Engineering Economics (CS 494 SEE)**

**Codes:** B P E Y 4  
**Textbooks:** *Software Engineering Economics*  
by Boehm, Barry W.

**Software Engineering with Ada (CS 496 ADA)**

**Codes:** B P E Y 3  
**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady  
**Tools:** Meridian, NYU-Ada/Ed-C, VAX Ada, Verdix Ada

**Additional Information:**

Four Computer-Aided Software Engineering (CASE) tools are used in the school's

computer lab.

---

**California State University, Sacramento**

School of Engineering and Computer Science  
Department of Computer Science  
Concentration in Software Engineering  
Sacramento, CA 95819

**Degrees:** BS CS, MS CS

**Contact:** Dr. Richard H. Thayer  
Professor in Computer Science  
(916) 278-6834

**Update:** September 1988

**Courses:** **Computer Software Engineering (CSC 131)**

**Codes:** U P R T 5

**Textbooks:** *Software Engineering with Systems Analysis and Design*  
by Steward, Donald V.

**Tools:** IBM PCs  
CASE tools

**Computer System Analysis (CSC 170)**

**Codes:** U P E T 13

**Textbooks:** *Introduction to System Analysis and Design: A Structured Design*  
by Kendall, Penny A.

**Tools:** IBM PCs  
CASE tools

**Software Engineering Project Management (CSC 171)**

**Codes:** U P E Y 11

**Textbooks:** *Project Management: A Managerial Approach*  
by Meredith, Jack R. and Mantel, Samuel J., Jr.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

**Documentation Design (CSC 178)**

**Codes:** U N E Y 4

**Textbooks:** *Writing Handbook for Computer Professionals*  
by Skees, William D.

**Tools:** IBM PCs  
Word processors

**Senior Project: Part I (CSC 190)**

**Codes:** U P R T 17

**Textbooks:** *Guide for Senior Project Documents*  
by Thayer, Richard H.

**Senior Project: Part II (CSC 191)**

**Codes:** U P R T 7

**Textbooks:** *Guide for Senior Project Documents*  
by Thayer, Richard H.

**Software Testing and Quality Assurance (CSC 196D)**

**Codes:** U P E Y 2

**Textbooks:** *Software Testing and Quality Assurance*  
by Beizer, Boris

**Foundation of Software Engineering (CSC 203)**

**Codes:** G N R Y 5

**Textbooks:** *Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.

**Software Requirement Analysis and Design (CSC 210)**

**Codes:** G P E Y 11

**Textbooks:** *An Integrated Approach to Software Development*  
by Abbott, J.R.

**Tools:** IBM PCs  
CASE tools

**Software Engineering Economics (CSC 231)**

**Codes:** G P E Y 15

**Textbooks:** *Software Engineering Economics*  
by Boehm, Barry W.

**Tools:** IBM PCs  
WICOMO or other PC-based cost analysis tools

**Advanced Computer System Analysis (CSC 240)**

**Codes:** G P E Y 11

**Textbooks:** *Structured Development for Real-Time Systems*  
by Ward, P.T. and Mellor, S.J.

**Introduction to System Engineering (Engr 130)**

**Codes:** U P E Y 3

**Textbooks:** *Systems Engineering: Methodology and Applications*  
by Sage, Andrew P. (ed.)

**Additional Information:**

Software Engineering Project Management is offered once every 1 or 1.5 years. Software Requirement Analysis and Design, Software Engineering Economics, and Advanced Computer System Analysis are offered once every 3 semesters. Foundation of Software Engineering is required for a MS in Computer Science if the student does not have an undergraduate foundation in software engineering.

---

**National University**

School of Engineering and Computer Sciences  
Master of Science in Software Engineering  
San Diego, CA 92108

**Degree:** MS SE

**Contact:** Prof. Peter H. R. Sibley  
Dean, School of Eng. and Comp. Sciences  
(619) 563-7123

**Update:** June 1987

**Courses:** **Principles of Software Engineering (CS 620)**

**Codes:** G N R T 3

**Textbooks:** *CMS Primer Release 3*  
by IBM  
*Information System Specification and Design Road Map*  
by Connor, D.

**Tools:** TeleSoft Ada  
IBM 4381 with VM/CMS  
CMS

**Advanced Software Engineering (CS 622)**

**Codes:** G P R T 3  
**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady  
**Tools:** TeleSoft Ada  
IBM 4381 with VM/CMS  
CMS

**Verification and Validation Techniques (CS 626)**

**Codes:** G P R T 3  
**Textbooks:** *Software Verification and Validation: Realistic Project Approaches*  
by Deutsch, M.S.  
**Tools:** TeleSoft Ada  
IBM 4381 with VM/CMS  
CMS

**Software Engineering Project I (CS 627a)**

**Codes:** G P R T 3  
**Textbooks:** *Information System Specification and Design Road Map*  
by Connor, D.  
**Tools:** TeleSoft Ada  
IBM 4381 with VM/CMS  
CMS

**Software Engineering Project II (CS 627b)**

**Codes:** G P R T 3  
**Textbooks:** *Information System Specification and Design Road Map*  
by Connor, D.  
**Tools:** TeleSoft Ada  
IBM 4381 with VM/CMS  
CMS

**Software Engineering Project III (CS 627c)**

**Codes:** G P R T 3  
**Textbooks:** *Information System Specification and Design Road Map*  
by Connor, D.  
**Tools:** TeleSoft Ada  
IBM 4381 with VM/CMS  
CMS

**Additional Information:**

This program is offered at all of the National University campuses. Dial-up facilities are offered on all campuses so that a student with a computer and a modem can work on the IBM mainframe from home. All classes are offered in a 1 class per month format, for a total of 48 contact hours in a 4 week period. The last 3 classes (CS 627a, CS 627b, and CS 627c) are capstone senior project classes where a major software package is designed and implemented using all of the software engineering techniques taught in the curriculum. Software engineering techniques are stressed throughout the Bachelor of Science in Computer Science degree program.

---

**Northrop University**

Department of Computer and Information Science  
Program - BS with specialization in SE  
Los Angeles, CA 90069

**Degrees:** BS CS, MS CS, MS IS

**Contact:** Dr. Julius G. Assad  
Associate Professor

(213) 337-4413

**Update:** September 1988

**Courses:** **Software Engineering I (CS-471)**

**Codes:** U P E O 3

**Textbooks:** *Software Engineering : the Production of Quality Software*  
by Pfleeger, Shari Lawrence

**Software Engineering II (CS-476)**

**Codes:** U P E Y 1

**Advanced Software Design (CS-475)**

**Codes:** U P E Y 3

**Textbooks:** *Structured Systems Analysis: Tools and Techniques*  
by Gane, Chris and Sarson, Trish

**Tools:** Turbo C, Turbo Pascal, XDB Excelerator CASE tools  
IBM PC  
FORTRAN, Gane/Sarson PDLs, SQL

---

**San Jose State University**

School of Science  
Department of Mathematics and Computer Science  
Programs in Computer Science and Mathematics  
San Jose, CA 95192-0103

**Degrees:** BA, BS, MA, MS

**Contact:** Prof. Veril L. Phillips  
Chairman  
(408) 924-5100

**Update:** February 1990

**Courses:** **Graduate Seminar In Computer Science (Math 295)**

**Codes:** G P R T 8

**Tools:** Assembly (various), C, Pascal, possibly others (individual projects)

**Additional Information:**

Graduate Seminar in Computer Science is essentially a software project requirement, emphasizing software engineering principles.

---

**Santa Clara University**

School of Engineering  
EECS  
Computer Engineering  
Santa Clara, CA 95053

**Degrees:** BS CE, MS CE, PHD CE, BS EE, MS EE, PHD EE

**Contact:** Dr. Daniel W. Lewis  
Associate Chair for Computer Engineering  
(408) 554-4483  
User ID: DLEWIS@SCU  
Network: BITNET

**Update:** February 1990



**Courses:** **Structure and Interpretation of Computer Programs (EECS 172)**

**Codes:** U P B Y 4

**Textbooks:** *Structure and Interpretation of Computer Programs*  
by Abelson and Sussman

**Tools:** IBM PC, HP engineering workstations  
TLC-LISP, PC-Scheme, Scheme

**Introduction to Software Engineering (EECS 174)**

**Codes:** U P B Y

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** UNIX workstations

**Structure and Interpretation of Computer Programs (EECS 561)**

**Codes:** G P B A 4

**Textbooks:** *Structure and Interpretation of Computer Programs*  
by Abelson and Sussman

**Tools:** HP workstations, IBM PC/AT and compatibles  
Scheme, PC-Scheme

**Software Engineering (EECS 585)**

**Codes:** G P B Y 4

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** UNIX workstations

---

**Stanford University**

School of Engineering  
Department of Computer Science  
Stanford, CA 94305

**Degrees:** BS CS, BS CSE, MS, MS AI, PHD

**Contact:** Roy Jones  
(415) 723-6092

**Update:** January 1989

**Courses:** **Object-Oriented Design with Ada (CS149)**

**Codes:** B P E Y 1

**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady

**Tools:** VAX 8650

**Software Engineering Laboratory (CS247)**

**Codes:** B P E Y 1

**Tools:** Microcomputer (varies)

---

**The Claremont Graduate School**

Department of Information Science  
Claremont, CA 91711

**Degrees:** MS CIS, MS MIS, PHD

**Contact:** Prof. Lorne Olfman  
Assistant Professor  
User ID: OLFMANL@CLARGRAD  
Network: BITNET

**Update:** November 1989

**Courses: Information Systems-Analysis and Design (IS 305)**

**Codes:** G P R Y 5

**Textbooks:** *Modern Structured Analysis*  
by Yourdon, Edward N.  
*The Practical Guide to Structured Systems Design, 2nd ed.*  
by Page-Jones, Meilir

**Tools:** IBM PC/AT  
Design/1, Method/1, Excelsior

**Systems Planning (IS 328)**

**Codes:** G P B Y 5

**Textbooks:** *Readings in Systems Planning (IS 328)*  
by Otfman, Lorne

**Tools:** IBM PC/AT  
Action Diagrammer, Design/1, Excelsior, Rbase for DOS  
University of Arizona GroupSystems, PRISM  
selected 4GLs

**Large Scale Software Development (IS 362)**

**Codes:** G P R Y 5

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** IBM PC/AT, Macintosh  
Excelsior  
selected 4GLs

**Additional Information:**

We follow the *Communications of the ACM*, November 1982 program for MS degrees in information systems.

---

**University of California, Berkeley**

College of Engineering  
Department of Electrical Engineering and Computer Science  
Program in Computer Science  
Berkeley, CA 94720

**Degrees:** BEECS, MS, ME, PHD, DENG

**Contact:** Mrs. Betty Webster  
CS Scheduling Assistant  
(415) 643-6130

**Update:**

**Additional Information:**

Introduction to Computer Science is offered in the Fall and Spring. Data Structures and Advanced Programming is offered in the Fall, Spring, and Summer.

---

**University of California, Irvine**

Department of Information and Computer Science  
Program in Computer Science  
Irvine, CA 92717

**Degree:** BS, MS, PHD

**Contact:** Prof. Nancy Leveson  
Associate Professor  
(714) 856-7403  
User ID: nancy@ics.uci.edu  
Network: Internet

**Update:** July 1987

**Courses:** Project in System Design (ICS 195)  
**Codes:** U N O T 1  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Sun UNIX  
VAX UNIX

**Software Engineering A (245A)**  
**Codes:** G N X Y 1  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Sun UNIX  
VAX UNIX

**Software Engineering B (245B)**  
**Codes:** G N X Y 1  
**Textbooks:** *IEEE Tutorial: Software Testing and Validation Techniques*  
by Miller, Edward and Howden, William E.

**Additional Information:**

Project in System Design is an option to fulfill the project requirement for B.S.

---

**University of California, Santa Cruz**  
Natural Sciences  
Computer and Information Sciences and Computer Engineering  
Santa Cruz, CA 95064

**Degrees:** BS IS, MS IS, PHD IS, BS CE, MS CE, PHD CE

**Contact:** Nancy Ann Furber  
Administrative Manager  
(408) 459-4822  
User ID: nancy@spica.ucsc.edu  
Network: Internet

**Update:** January 1990

**Courses:** **Software Methodology (CIS 115)**  
**Codes:** U P E Y 4  
**Textbooks:** *Software Engineering, 3rd ed.*  
by Sommerville, Ian  
**Tools:** C++  
UNIX  
make, RCS, curses package (specifically for C++)  
data flow diagrams, paper prototyping

**Software Engineering (CE 276)**  
**Codes:** G P E Y 1  
**Textbooks:** Selected readings

**University of Southern California (Entry 1)**

School of Engineering  
Department of Industrial and Systems Engineering  
Program in Human Factors  
Los Angeles, CA 90089

**Degrees:** MS ISE, PHD ISE

**Contact:** Dr. Mark H. Chignell  
Assistant Professor  
(213) 743-2705  
User ID: chignell@mizar.usc@oberon.usc.edu

**Update:** October 1988

**Courses:** Intelligent Interfaces (ISE 578)

**Codes:** G P E Y 4  
**Textbooks:** *Expert Systems for Experts*  
by Parsaye, K. and M. Chignell  
**Tools:** IBM AT  
Macintosh II  
HyperCard / Hypertalk, Intelligence / Compiler

**Cognitive Engineering (ISE 576)**

**Codes:** G P R Y 2  
**Textbooks:** *Readings in Human-Computer Interaction*  
by Baecker, R.M. and W.A.S. Buxton  
**Tools:** Macintosh II  
HyperCard / Hypertalk

**Additional Information:**

Intelligent Interfaces focuses on the use of machine reasoning and graphics to improve the human interface. It also covers issues relating to the modularity and maintainability of complex software. It stresses a logic programming approach.

---

**University of Southern California (Entry 2)**

School of Engineering  
Computer Science Department  
Los Angeles, CA 90089

**Degrees:** MS CS, PHD CS

**Contact:** Dr. Mark H. Chignell  
Assistant Professor  
(213) 743-2705  
User ID: chignell@mizar.usc@oberon.usc.edu

**Update:** November 1988

**Courses:** Introduction to Software Engineering (CS 201L)

**Codes:** U P R T 1  
**Textbooks:** *C Programming in the Berkeley UNIX Environment*  
by Horspool, R.  
*The Practical Guide to Structured Systems Design*  
by Page-Jones, Meilir  
**Tools:** Sun 3 Workstations

**Design and Construction of Large Software Systems (CS 477L)**

**Codes:** U P E Y 1

**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
*The C Programming Language*  
by Kernighan, Brian and Richie, Dennis  
*Writing Efficient Programs*  
by Bentley, Jon Louis  
**Tools:** Sun 3 Workstations

**Management of Computing: Theory and Practice (CS 510)**  
**Codes:** G N E Y 1  
**Tools:** Sun 3 and IBM RT Workstations

**Design and Construction of Large Software Systems (CS 577a)**  
**Codes:** G N E Y 1  
**Textbooks:** *Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.  
*Software Specification Techniques*  
by Gehani, N. and McGettrich, A.  
*The UNIX Programming Environment*  
by Kernighan, Brian and Pike, Rob  
**Tools:** Sun 3 Workstations

**Design and Construction of Large Software Systems (CS 577b)**  
**Codes:** G P E Y 1  
**Textbooks:** *Advanced UNIX Programming*  
by Rochkind, Mark J.  
*C, a Reference Manual*  
by Harbison, Samuel P. and Steele, Guy L.  
*C Programming in the Berkeley UNIX Environment*  
by Horspool, R.  
*The X Windows System*  
by Gettys, J. et al.  
**Tools:** Sun 3 Workstations

## Colorado

---

### United States Air Force Academy

Department of Computer Science  
Program in Computer Science  
Colorado Springs, CO 80840

**Degree:** BS CS

**Contact:** LtCol William E. Richardson  
Professor and Head  
(719) 472-3592  
User ID: BILL@USAFA.ARPA

**Update:** September 1988

**Courses:** **Systems Analysis and Design I (Comp Sci 453)**

**Codes:** U P R Y 7

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Structured Systems Analysis: Tools and Techniques*  
by Gane, Chris and Sarson, Trish

**Systems Analysis and Design II (Comp Sci 454)**

**Codes:** U P R Y 7

**Textbooks:** *The Practical Guide to Structured Systems Design*  
by Page-Jones, Meilir

**Fundamentals of Computer Science (Comp Sci 225)**

**Codes:** U P R T 3

**Textbooks:** *Advanced Programming and Problem Solving with Pascal*  
by Schneider, G. Michael and Bruell, Steven C.

**Tools:** DG Pascal  
DG MV10000

**Real-Time Systems (Comp Sci 473)**

**Codes:** U P R Y 1

**Additional Information:**

Approximately 1/4 of Fundamentals of Computer Science deals with software engineering.

---

### University of Colorado at Colorado Springs

School of Engineering and Applied Science  
Department of Computer Science  
Colorado Springs, CO 80933

**Degree:** BS, MS

**Contact:** Dr. Robert W. Sebesta  
Chair  
(303) 593-3325

**Update:** None

**Courses:** **Introduction to Software Engineering (CS 330)**

**Codes:** U N R T 1

**Textbooks:** *Software Engineering with Ada and Modula-2*  
by Wiener, Richard, and Sincovec, Richard  
**Tools:** MicroVAX

**Systems Engineering Management (CS 435/535)**  
**Codes:** B N E A 1

**Software Engineering Laboratory (CS 436/536)**  
**Codes:** B P E A 1

**Software Specification and Requirements Analysis (CS 531)**  
**Codes:** G N E A 1

**Software Design (CS 532)**  
**Codes:** G N E A 1

**Software Testing (CS 533)**  
**Codes:** G N E A 1

**Software Maintenance (CS 534)**  
**Codes:** G N E A 1

**Topics and Readings in Software Engineering (CS 630)**  
**Codes:** G N E D 1

**Additional Information:**

Software Engineering Laboratory with 7 MicroVAX computers, 2 VAX stations,  
1 Sun and a Gould System.

---

**University of Denver**

Faculty of Mathematical and Computer Sciences  
Department of Mathematics and Computer Science  
Program in Computer Science  
Denver, CO 80208

**Degree:** MS, PHD

**Contact:** Prof. Michael S. Martin  
Assistant Chairperson  
(303) 871-3291  
User ID: mmartin@ducair

**Update:** September 1988

**Courses:** **Software Engineering I, II, III (COMP 4380, COMP 4381, COMP 4382)**  
**Codes:** G P E Y 5  
**Tools:** C, Pascal  
VAX 11/750

**Additional Information:**

Software Engineering I is offered twice a year.

## Connecticut

---

**Central Connecticut State University**  
School of Arts and Science  
Department of Mathematics and Computer Science  
Program in Computer Science  
New Britain, CT 06050

**Degree:** BS

**Contact:** Prof. George B. Miller  
Chairman, Math and Computer Science  
(203) 827-7334

**Update:** November 1987

**Courses:** **Introduction to Software Engineering (CS 410)**  
**Codes:** U P E Y 5  
**Textbooks:** *Software Engineering with MODULA-2 and Ada*  
by Wiener, Richard S. and Sincovec, Richard F.  
**Tools:** VAX 8600  
Pascal

**Software Engineering II (CS 514)**  
**Codes:** G P R Y 2  
**Tools:** Pascal

**Computer System Software and Architecture I (CS 516)**  
**Codes:** G P R Y 2  
**Tools:** Pascal

**Computer System Software and Architecture II (CS 517)**  
**Codes:** G P R Y 2  
**Tools:** Pascal

**On Line, Real Time, and Time Sharing Systems (CS 257)**  
**Codes:** G P E Y 2  
**Tools:** Pascal

---

**The Hartford Graduate Center**  
School of Engineering and Science  
Department of Computer and Information Science  
Program in Computer and Information Science  
Hartford, CT 06120

**Degree:** MCS

**Contact:** Dr. Michael Danchak  
Dean, School of Engineering and Science  
(203) 548-2450

**Update:** None

**Courses:** **Software Engineering I (35677)**  
**Codes:** G P B T 5  
  
**Software Engineering II (35678)**



Codes: G P E Y 5

**Software Engineering Specification (66696)**

Codes: G P E Y

**User Interface Development (66834)**

Codes: G P E Y 5

Textbooks: *Designing the User Interface*  
by Schneiderman  
*Readings in Human Computer Interaction*  
by Baecker & Buxton

Tools: Sun, Macintosh  
Sunview, Hypercard, Prototyper  
C, Pascal, Hypertalk

## Delaware

---

**University of Delaware**

College of Arts and Science  
Department of Computer and Information Sciences  
Newark, DE 19716

**Degree:** BA, BS, MS, PHD

**Contact:** Prof. Eugene J. Bell  
Assistant Professor  
(302) 451-1957

**Update:** None

**Courses:** Advanced Topics: Software Engineering (CIS 879)

Codes: G N E O 2

Tools: C  
Modula-2  
VAX UNIX

## District of Columbia

---

### The American University

Department of Computer Science and Information Systems  
Washington, DC 20016

**Contact:** Dr. Mehdi Owrang  
Assistant Professor  
(202) 885-3159

**Update:** January 1990

**Courses:** **Software Engineering (40-345)**

**Codes:** U P E Y 2

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** C, Pascal  
Teamwork  
IBM PC

**Software Engineering (40-700)**

**Codes:** G P E D

**Textbooks:** *Software Engineering: The Production of Quality Software*  
by Pfleeger, Shari Lawrence

---

### The George Washington University

School of Engineering and Applied Science  
Department of Electrical Engineering and Computer Science  
Washington, DC 20052

**Degrees:** BS CS, MS CS, SCD

**Contact:** James Foley  
Chairman  
(202) 994-6083

**Update:** None

**Courses:** **System Software and Software Engineering (C.Sci. 151)**

**Codes:** U P R T 5

**Textbooks:** *Software Engineering, 3rd ed.*  
by Sommerville, Ian

**Tools:** Sun Workstations  
C, UNIX

**Computer Science 270 (C.Sci. 270)**

**Codes:** G P E Y 2

**Textbooks:** *Program Construction and Verification*  
by Backhouse, R. C.  
*The Specification of Complex Systems*  
by Cohen, B., W.T. Harwood, and M.I. Jackson

**Tools:** PC  
Sun  
Lex, Lint, Prolog, UNIX, Yacc

**Additional Information:**

System Software and Software Engineering is offered each Fall.

## Florida

---

### Barry University

School of Computer Science  
Department of Computer Science  
Computer Science  
Miami, FL 33161

**Degrees:** BCS, MCS, MO, PHD CS, CIS, MIS, SE, TCS, CSE

**Contact:** Dr. L. O. Stromberg  
Chair, Department of Computer Science  
(305) 899-3608  
User ID: LOS@Barry.edu

**Update:** January 1990

**Courses:** **Software Engineering (CS 640)**  
**Codes:** G P R A 2  
**Textbooks:** *Tutorial on Software Design Techniques, 4th ed.*  
by Freeman & Wasserman  
**Tools:** Ada, C, Pascal  
CASE, Focus  
VAX 6310

**Applied Software Development Project (CIS 512)**  
**Codes:** G P R T 4  
**Textbooks:** *Structured Analysis Methods*  
by Teague  
**Tools:** Ada, C, Pascal  
CASE, Focus  
VAX 6310

---

### Florida Atlantic University

College of Engineering  
Department of Computer Science  
Boca Raton, FL 33431-0991

**Degrees:** BS, MS, MCS

**Contact:** Dr. Neal S. Coulter  
Chairman  
(407) 367-3180  
User ID: coultern@servax  
Network: BITNET

**Update:** November 1989

**Courses:** **Software Engineering (CIS 6610)**  
**Codes:** G N R A 9  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** Ada, C++, Pascal  
HP 900V/300 Series  
PCs  
VAX 6230  
VAX 8800

**Principles of Software Design (CIS 4610)**

**Codes:** U P R T 2

**Textbooks:** *Programming in Ada*  
by Barnes, John Gilbert Presslie  
*Software Engineering: A Programming Approach*  
by Bell, D., Morrey, I. and Pugh, J.

**Tools:** DEC Ada  
VAX 8800

**Additional Information:**

Software Engineering is offered 1-2 times per calendar year. Principles of Software Design is offered 2-3 times per calendar year.

---

**Nova University**

Center for Computer and Information Sciences  
Graduate Department of Computer Science  
Program in Computer Science  
Ft. Lauderdale, FL 33314

**Degrees:** BS CS, MS CS, SCD CS

**Contact:** Dr. Edward R. Simco  
Director  
(305) 475-7563  
User ID: uucp:gatechlufordalnovavaxled

**Update:** February 1990

**Courses: Software Engineering (CIS 680)**

**Codes:** G N R Y 4

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** Ada, Concurrent C, Pascal, C++  
3B2/500 (UNIX)  
VAX 785 (VMS)  
VAX 8550 (ULTRIX)

**Software Engineering Implementation (CIS 682)**

**Codes:** G P E Y 4

**Textbooks:** *Practical Handbook for Software Development*  
by Birrell and Ould  
*Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

**Tools:** Ada, Concurrent C, Pascal, C++  
3B2/500 (UNIX)  
VAX 785 (VMS)  
VAX 8550 (ULTRIX)

**Software Engineering (CIS 770)**

**Codes:** G P R Y 2

**Textbooks:** *Software Reliability, Prediction, Application*  
by Musa, J.

**Tools:** Ada, Concurrent C, Pascal, C++  
3B2/500 (UNIX)  
VAX 785 (VMS)  
VAX 8550 (ULTRIX)

**Software Engineering Project (CIS 870)**

**Codes:** G P R Y 2

**Textbooks:** *Designing the User Interface*

Tools: by Shneiderman, Ben  
Ada, Concurrent C, Pascal, C++  
3B2/500 (UNIX)  
VAX 785 (VMS)  
VAX 8550 (ULTRIX)

**Additional Information:**

Software Engineering is offered twice a year.

---

**University of Central Florida (Entry 1)**

Department of Computer Engineering (CEBA 207)  
Program in Computer Engineering  
Orlando, FL 32816

**Degrees:** BS E, MS, MS E, PHD

**Contact:** Dr. Darrell G. Linton  
Associate Professor of Engineering  
(407) 275-2236

**Update:** September 1988

**Courses: Software Engineering I (ECM 5806)**

**Codes:** B P B Y 1  
**Textbooks:** *Ada: An Introduction*  
by Saib, S.  
*Ada Language Reference Manual*  
(ANSI MIL-STD-1815A)  
*Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Gould 32/6780 (ISCS Ada translator)  
IBM 4381 (Telesoft Ada compiler)  
VAX 11/750 (Ada compiler)

**Software Engineering II (ECM 6807)**

**Codes:** G P E Y 1  
**Textbooks:** *Ada: An Introduction*  
by Saib, S.  
*Ada Language Reference Manual*  
(ANSI MIL-STD-1815A)  
*Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Gould 32/6780 (ISCS Ada translator)  
IBM 4381 (Telesoft Ada compiler)  
VAX 11/750 (Ada compiler)

---

**University of Central Florida (Entry 2)**

College of Arts and Sciences  
Department of Computer Science  
Orlando, FL 32816

**Degrees:** MS CS, PHD CS

**Contact:** Dr. Darrell G. Linton  
Associate Professor of Engineering  
(407) 275-2236

**Update:** None

**Courses:** **Software Engineering (COP 5632)**  
**Codes:** G N E X 1

**Software Tools (COP 5682)**  
**Codes:** G P E X 1

**Additional Information:**

A student's plan of study can be designated to emphasize any number of areas within Computer Science. Some sample plans of study are Architecture Emphasis, Operating Systems Emphasis, Artificial Intelligence Emphasis, Data Base Management Emphasis, and Software Tools Emphasis. These do not include all areas of emphasis, but show the flexibility of the Master of Science Program.

---

**University of South Florida**  
College of Engineering  
Department of Computer Science and Engineering  
Tampa, FL 33620

**Degrees:** MS, PHD

**Contact:** Dr. M. R. Varanasi  
Graduate Program Coordinator  
(813) 974-3033

**Update:** None

**Courses:** **Software Engineering I - Basic Principles and Formal Methods (COP 6630)**  
**Codes:** G N E B 1

**Software Engineering II - Tools and Applied Techniques (COP 6634)**  
**Codes:** G P E B 1

## Hawaii

---

**University of Hawaii at Hilo**  
Natural Sciences  
Department of Computer Science and Engineering  
Hilo, HI 96720

**Degree:** BCS

**Contact:** Dr. Bill Chen  
Professor  
(808) 933-3388  
User ID: chen@UHCCUX.UHCC.Hawaii.EDU  
Network: Internet

**Update:** February 1990

**Courses:** **Compiler Theory (CS 435)**  
Codes: U P E Y 4

**Computer Sciences Applications (CS 494)**  
Codes: U P E D 1

**Software Engineering Methodologies (CS 465)**  
Codes: U P E Y  
Textbooks: *Modern Structured Analysis*  
by Yourdon, Edward N.  
*Software Engineering*  
by Sommerville, Ian  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Teaching a Project-Intensive Introduction to Software Engineering*  
by Tomayko, James

**Systems Analysis and Design (CS 360)**  
Codes: U P R Y 5  
Textbooks: *Computers and the Information Society*  
by Rosenberg, R.  
*Crafting a Compiler*  
by Fischer, C. and LeBlanc, R. Jr.  
*Modern Structured Analysis*  
by Yourdon, Edward N.  
Selected readings  
*Software Engineering*  
by Sommerville, Ian  
*Software Engineering: A Beginners Guide*  
by Pressman, Roger S.  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Software Engineering: An Industrial Approach*  
by Radice, R. and Phillips, R.  
*Systems Analysis and Design*  
by Kendall, J. and Kendall, K.

**Tools:** Exceleator  
IBM PC  
Macintosh  
Ada/CS, Turbo Pascal  
Janus/Ada  
MacBubbles



**Database Management System Design (CS 425)**

**Codes:** U P E D 1

**Textbooks:** *Principles of Database Systems*

by Ullman, J.

*Teaching a Project-Intensive Introduction to Software Engineering*

by Tomayko, James

*Understanding Database Management Systems*

by Vasta, J.

**Tools:** IBM PC

Turbo Pascal

## Idaho

---

### University of Idaho

College of Engineering  
Department of Computer Science  
Programs in Scientific Computing and Data Processing  
Moscow, ID 83843

**Degrees:** BS CS, MS CS

**Contact:** Dr. John Dickinson  
Chairman  
(208) 885-6589  
User ID: JOHND@IDUI1  
Network: BITNET

**Update:** October 1987

**Courses:** **CS Design I (CS 480)**  
**Codes:** U P R T 7  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** HP workstations, IBM 4381  
IBM PC, VAX 11/780

**CS Design II (CS 481)**  
**Codes:** U P R T 7  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** HP workstations, IBM 4381  
IBM PC, VAX 11/780

**Software Engineering (CS 410/510)**  
**Codes:** B P E Y 7  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** HP workstations  
IEW, TEAMWORK

**Software Metrics (CS 511)**  
**Codes:** G P R B 4  
**Textbooks:** *Controlling Software Projects*  
by DeMarco, Tom  
*Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.  
**Tools:** Metric extraction tools  
Cost estimation tools

**Software Quality Assurance and Testing (CS 404/504)**  
**Codes:** B P E Y 4  
**Textbooks:** *Software Quality Engineering*  
by Deutsch and Willis  
*Software Testing Techniques*  
by Beizer  
**Tools:** Turbo Pascal  
IBM PC

**Empirical Studies in Programming (CS 404/504)**  
**Codes:** B P E B

**Additional Information:**

CS Design I is an individual project with full documentation. CS Design II is a team project with full documentation.

## Illinois

---

### **Bradley University**

College of Liberal Arts and Sciences  
Department of Computer Science  
Peoria, IL 61625

**Degrees:** BS, MS

**Contact:** Prof. John Fendrich  
Chairman  
(309) 677-2460

**Update:** April 1990

**Courses:** **Systems Analysis and Design (System Specification and Development) (CS 403)**

**Codes:** U P E O 8

**Textbooks:** *Structured Analysis and System Specification*  
by DeMarco, Tom

**Tools:** Personal computers  
Text processing system, Word processing system

**Systems Analysis and Design (System Specification and Development) (CS 608)**

**Codes:** G P E O 8

**Textbooks:** *Structured Analysis and System Specification*  
by DeMarco, Tom

**Tools:** Personal computers  
Text processing system, Word processing system

**Programming Methodology (CS 503)**

**Codes:** B P E O 6

**Textbooks:** *Discipline of Programming*  
by Dijkstra, Edsger Wybe  
*The Science of Programming*  
by Gries, David

**Introduction to Software Engineering (CS 406)**

**Codes:** U P E Y 2

**Structured Programming Using C (CS 221)**

**Codes:** U P E O 5

**Textbooks:** *Efficient C*  
by Plum, Thomas and Brodie, Jim  
*Learning to Program in C*  
by Plum, Thomas  
*Reliable Data Structures in C*  
by Plum, Thomas

**Tools:** C  
AT&T 3B series  
VAX

**Software Engineering I (CS 615)**

**Codes:** G P E Y 5

**Textbooks:** *Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

**Tools:** SPSS  
Cyber

**Software Engineering II (CS 616)**

Codes: G P E Y 5  
Textbooks: *Handbook of Walkthroughs, Inspections, and Technical Reviews*  
by Freedman, Daniel P. and Weinberg, Gerald M.  
*Software Testing Techniques*  
by Beizer, Boris

**Additional Information:**

Systems Analysis and Design (System Specification and Development), CS 403 and CS 608, is offered at least twice a year. Programming Methodology and Structured Programming Using C are offered twice a year. Plans call for a course in Ada-based system design as well as a course in Ada-based software engineering. A course is planned in parallel processing and software engineering.

---

**DePaul University**

School of Liberal Arts and Sciences  
Department of Computer Science and Information Systems  
Chicago, IL 60604

**Degrees:** BS, MS

**Contact:** Dr. Helmut P. Epp  
Department Chairman  
(312) 341-8366

**Update:** May 1987

**Courses:** **Software Projects (394)**  
Codes: U P R O 6  
Tools: DEC  
VAX 11/780  
C

**Software Engineering (365)**  
Codes: U P R O 3  
Textbooks: *Software Engineering*  
by Sommerville, Ian  
Tools: TeleSoft  
VAX 11/780  
Ada

**Software Measurement and Quality (366)**  
Codes: U P E Y 2  
Textbooks: *Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

**Software Measurement and Quality (486)**  
Codes: G P E Y 2  
Textbooks: *Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

**Programming in Ada (230)**  
Codes: U N E Y 3  
Textbooks: *Software Engineering with Ada*  
by Booch, Grady  
Tools: TeleSoft  
VAX 11/780  
Ada

**Additional Information:**

Software Engineering is offered twice a year and Software Projects is offered three times a year.

---

**Sangamon State University**  
School of Liberal Arts and Sciences  
Department of Mathematical Systems  
Springfield, IL 62708

**Degrees:** BA CS, MS M

**Contact:** Prof. Gary Lasby  
Convener  
(217) 786-6770

**Update:** None

**Courses:** Introduction to Software Engineering (MSY 478)  
Codes: U P E Y 1

Software Engineering (MSY 578)  
Codes: G P E Y 1

**Additional Information:**

Concepts of software engineering as embodied in good programming styles are stressed in all our courses.

---

**Southern Illinois University at Edwardsville**  
School of Sciences  
Department of Computer Science  
Edwardsville, IL 62026

**Degrees:** BA, BS CS

**Contact:** Dr. J. R. Hattemer  
Chair  
(618) 692-2386

**Update:** September 1988

**Courses:** Software Design and Development (CS 424)  
Codes: B P E Y 5  
Textbooks: *Software Engineering: Planning for Change*  
by Lamb, David  
Topics in Software Engineering (CS 524)  
Codes: G N E O 2  
Tools: Ada  
MicroVAX 2

**Additional Information:**

Topics in Software Engineering is offered occasionally.

---

**University of Illinois at Chicago**  
College of Engineering  
Department of Electrical Engineering and Computer Science  
Program in Software Engineering  
Chicago, IL 60680

**Degrees:** BS EE, BS CSE, MS EE, MS CS, PHD EE, PHD CS

**Contact:** Dr. Carl K. Chang  
Assistant Professor  
(312) 996-4860  
User ID: ckchang@uicbert.eecs.uic.edu  
Network: CSNET

**Update:** February 1989

**Courses:** Introduction to Software Engineering (EECS 274)

**Codes:** U P R O 8  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** UNIX BSD 4.2 C  
VAX 11/750

Advanced Topics in Software Engineering (EECS 481)

**Codes:** G P E Y 5  
**Textbooks:** *Software Engineering: Analysis and Verification*  
by Lewis, T. G.  
**Tools:** Sun 3 and Sun SPARC Workstations  
UNIX BSD 4.2 C  
Petri Net Tools

Software Engineering Environments (EECS 482)

**Codes:** G P E Y 5  
**Textbooks:** *Software Engineering Environments*  
by Charette, Robert  
**Tools:** Sun 3 and Sun SPARC Workstations  
UNIX BSD 4.2 C

**Additional Information:**

Introduction to Software Engineering is offered twice a year.  
Dr. Carl Chang is currently in charge of the Software Engineering  
Laboratory for this department.

---

**University of Illinois at Urbana-Champaign**  
Department of Computer Science  
Urbana, IL 61801

**Degrees:** MS, MS TCS, MCS, PHD

**Contact:** Dr. Samuel N. Kamin  
Associate Professor  
(217) 333-6769  
User ID: kamin@a.CS.UIUC.EDU

**Update:** January 1989

**Courses:** Operating Systems (CS 323)

**Codes:** B P E O 16  
**Textbooks:** *An Introduction to Operating Systems*  
by Deitel, H.M.  
**Tools:** Path Pascal  
IBM 9000

Software Engineering (CS 327)

**Codes:** B P E Y 6  
**Textbooks:** *Software Engineering: A Practitioner's Approach*

by Pressman, Roger S.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
C, Lisp, Pascal  
IBM PC/RT

**Tools:**

**Additional Information:**

Operating Systems is offered twice a year.



## Indiana

---

### Ball State University

College of Sciences and Humanities  
Department of Computer Science  
Program in Computer Science  
Muncie, IN 47306

**Degrees:** BS, MA, MS

**Contact:** Prof. W. F. Brown  
Professor  
(317) 285-8644

**Update:** May 1987

**Courses:** **Software Engineering I (Systems Analysis) (497)**

**Codes:** U P R O 11

**Textbooks:** *Standards Manual for Software Engineering I*  
by Brown, W.F. (ed.)  
*Structured Analysis and System Specification*  
by DeMarco, Tom  
*Systems Analysis - Definition, Process, and Design*  
by Semprevivo, Philip

**Tools:** C, COBOL, FORTRAN, Pascal  
Dept VAX 785 (UNIX)  
VAX cluster (three 785 and one 86500)

**Software Engineering II (Design and Development) (498)**

**Codes:** U P R O 5

**Textbooks:** *Standards Manual for Software Engineering II*  
by Brown, W.F., (ed.)  
*Structured Analysis and System Specification*  
by DeMarco, Tom  
*Structured Design*  
by Yourdon, Edward N. and Constantine, Larry L.

**Tools:** C, COBOL, FORTRAN, Pascal  
Dept VAX 785 (UNIX)  
VAX cluster (3 785, 1 86500)

**Principles of Software Engineering (580)**

**Codes:** G N R Y 4

**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.

**Tools:** Ada, C  
Dept VAX 785 (UNIX)  
VAX cluster

**Additional Information:**

Software Engineering I (Systems Analysis) and Software Engineering II (Design and Development) are offered twice a year. We also offer a seminar about once a year or so on Ada. The book used is *Software Engineering with Ada* by Grady Booch. The software projects from CS 497-498 are actual projects selected by the students and each is approved by the professor. We are presently developing 2 courses which will be offered in parallel with CS 497-498. One will be in technical writing to be taught by the Department of English. The other will be in team-building and will be given by the Department of Psychological Science.

---

**Indiana University**

College of Arts and Sciences  
Computer Science Department  
Bloomington, IN 47405

**Degrees:** BA, BS, MS, PHD

**Contact:** Prof. Edward L. Robertson  
Professor  
(812) 335-4954  
User ID: elr@iuvax.cs.indiana.edu

**Update:** September 1988

**Courses:** **Information Systems I (C445)**

**Codes:** B P O Y 7

**Textbooks:** *An Introduction to Database Systems*  
by Date, Chris J.  
*Database System Concepts*  
by Korth, Henry F. and Silberschatz, Abraham  
*Software Engineering*  
by Sommerville, Ian  
*Tools and Techniques for Structured Systems Analysis and Design*  
by Davis, William S.  
**Tools:** VAX (ULTRIX)  
Xerox workstations  
C, FORTRAN, Ingres, Modula-2, dBase III plus, rBase 5000

**Information Systems II (C446)**

**Codes:** B P O Y 7

**Textbooks:** *An Introduction to Database Systems*  
by Date, Chris J.  
*Database System Concepts*  
by Korth, Henry F. and Silberschatz, Abraham  
*Software Engineering*  
by Sommerville, Ian  
*Tools and Techniques for Structured Systems Analysis and Design*  
by Davis, William S.  
**Tools:** VAX (ULTRIX)  
Xerox workstations  
C, FORTRAN, Ingres, Modula-2, dBase III plus, rBase 5000

**Software Engineering Management (C607)**

**Codes:** G P E Y 5

**Textbooks:** *Advanced Course on Software Engineering*  
by Bauer, Friedrich Ludwig  
*Concise Notes on Software Engineering*  
by DeMarco, Tom  
*Current Practices in Software Development: A Guide to Successful Systems*  
by King, David  
*In Search of Excellence: Lessons From America's Best-Run Companies*  
by Peters, Thomas and Waterman, Robert  
*Managing a Programming Project*  
by Metzger, Philip W.  
*Software Configuration Management*  
by Babich, Wayne A.  
*Software Engineering*  
by Sommerville, Ian  
*Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.  
*Software Engineering Concepts*

by Fairley, Richard E.  
*Software Engineering Economics*  
by Boehm, Barry W.  
*Software Psychology: Human Factors in Computer and Information Systems*  
by Shneiderman, Ben  
*Software Reliability*  
by Kopetz, H.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
*The Psychology of Computer Programming*  
by Weinberg, G.M.  
*Tools and Techniques for Structured Systems Analysis and Design*  
by Davis, William S.

**Software Engineering Management (C608)**

Codes: G P E Y 5

Textbooks: *Advanced Course on Software Engineering*  
by Bauer, Friedrich Ludwig  
*Concise Notes on Software Engineering*  
by DeMarco, Tom  
*Current Practices in Software Development: A Guide to Successful Systems*  
by King, David  
*In Search of Excellence: Lessons From America's Best-Run Companies*  
by Peters, Thomas and Waterman, Robert  
*Managing a Programming Project*  
by Metzger, Philip W.  
*Software Configuration Management*  
by Babich, Wayne A.  
*Software Engineering*  
by Sommerville, Ian  
*Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
*Software Engineering Economics*  
by Boehm, Barry W.  
*Software Psychology: Human Factors in Computer and Information Systems*  
by Shneiderman, Ben  
*Software Reliability*  
by Kopetz, H.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
*The Psychology of Computer Programming*  
by Weinberg, G.M.  
*Tools and Techniques for Structured Systems Analysis and Design*  
by Davis, William S.

**Additional Information:**

Information Systems I and II are one of several choices for BA/BS.  
A "Professional Practice" course may satisfy the BA/BS requirement with suitable individual project and paper.

---

**Purdue University (Entry 1)**

School of Science  
Department of Computer Science  
West Lafayette, IN 47907

**Degrees:** BS, MS, PHD

**Contact:** Dr. H. E. Dunsmore

Associate Professor  
(317) 494-1996  
User ID: bxd@purdue.edu

**Update:** None

**Courses:** **Software Engineering (CS 404)**  
Codes: U P E T 1  
Textbooks: *Software Engineering*  
by Sommerville, Ian  
Tools: DEC VAX 11/780 (UNIX OS)

**Software Metrics (CS 510)**  
Codes: G P E Y 1  
Textbooks: *Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.  
Tools: DEC VAX 11/780 (UNIX OS)

**Information Systems (CS 442)**  
Codes: U P E T 1  
Textbooks: *Management Info. Systems: Conceptual Foundations, Structure, and Development*  
by Davis, Gordon Bitter and Olson, Margrethe H.  
Tools: DEC VAX 11/780 (UNIX OS)

---

**Purdue University (Entry 2)**  
School of Industrial Engineering  
West Lafayette, IN 47907

**Degrees:** BS, MS, PHD

**Contact:** Prof. F. F. Leimkuhler  
Head  
(317) 494-5444

**Update:** June 1987

**Courses:**

**Cognitive Engineering of Interactive Software (IE 559)**  
Codes: G P E Y 4  
Textbooks: *Human-Computer Dialogue Design*  
by Ehrich, Roger W. and Williges, Robert C.  
Tools: IBM PC/AT  
FORTRAN

---

**Rose-Hulman Institute of Technology**  
Department of Computer Science  
Terre Haute, IN 47803

**Degrees:** BS

**Contact:** Prof. Frank H. Young  
Chairman  
(812) 877-8401  
User ID: young@rosevc.rose-hulman.edu  
Network: BITNET

**Update:** February 1990

**Courses:** **Software Engineering (CS 414)**  
**Codes:** U P R Y 5  
**Textbooks:** *Software Engineering, 2nd ed.*  
by Pressman, Roger S.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
**Tools:** Ada, Pascal, C  
DEC VAX 6320 (VMS), Sun workstations

**Software System Documentation (CS 405)**  
**Codes:** U P R Y 4

**Senior Computer Science Project I & II (CS 497/CS 498)**  
**Codes:** U P R Y 2

---

**University of Evansville**  
School of Engineering and Computer Science  
Department of Computing Science  
Evansville, IN 47714

**Degrees:** BA, BS, MS CSED, MS MIS

**Contact:** Dr. William Mitchell  
Chairman  
(812) 479-2650

**Update:** None

**Courses:** **Software Engineering (CS 325)**  
**Codes:** U P R O 1

**Software Engineering Project (CS 494/495/497)**  
**Codes:** U P R T 1

**Software Engineering (CS 521)**  
**Codes:** G N B O 1  
**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.

**Additional Information:**

Software Engineering (undergraduate) and Software Engineering (graduate) are offered twice a year.

## Iowa

---

### Iowa State University

School of Sciences and Humanities  
Department of Computer Science  
Program in Computer Science  
Ames, IA 50011

**Degrees:** BS, MS, PHD

**Contact:** Prof. Arthur E. Oldehoeft  
Chair  
(515) 254-4377

**Update:** October 1988

**Courses:** **Software Engineering (CS 411)**

Codes: U N E O 6

Textbooks: *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.

Tools: HP 9000 Model 350  
Ada

**Software Engineering (CS 512)**

Codes: G N E Y 3

**Additional Information:**

Software Engineering is offered twice a year.

---

### University of Iowa

College of Liberal Arts  
Department of Computer Science  
Iowa City, IA 52242

**Degrees:** BA CS, BS CS, MS CS, PHD CS

**Contact:** William F. Decker  
Asst. Research Scientist  
(319) 335-0747  
User ID: [decker@cs.uiowa.edu](mailto:decker@cs.uiowa.edu)  
Network: Internet

**Update:** March 1990

**Courses:** **Software Engineering (22c:115)**

Codes: G P E T 6

Textbooks: *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

Tools: Students' choice  
Encore Multimax  
IBM PC  
Macintosh

## Kansas

---

### **The Wichita State University**

College of Liberal Arts and Sciences  
Department of Computer Science  
Wichita, KS 67208

**Degrees:** BA, BS, MS, MCS

**Contact:** Dr. Donald Gotterbarn  
(316) 689-3156  
User ID: gotterbarn@twsvax  
Network: BITNET

**Update:** December 1989

**Courses:** Introduction to Software Engineering (CS 580)

**Codes:** B P E T 8  
**Textbooks:** *Software Engineering, 3rd ed.*  
by Sommerville, I.  
**Tools:** Ada, Pascal  
IBM 3031D  
VAX 750

**Ada and Software Engineering (CS 611)**

**Codes:** G P E Y 4  
**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady  
**Tools:** ALSYS  
IBM at CLONE  
Ada

**Applications Systems Analysis (CS 684)**

**Codes:** G P E B 7

**Software Testing and Reliability (CS 882)**

**Codes:** G P R Y 7  
**Tools:** Ada, Pascal  
VAX

**Requirements Specification and Design (CS 881)**

**Codes:** G P R B 1  
**Textbooks:** Selected readings  
**Tools:** VAX 8300

**Software Project Management (CS 886)**

**Codes:** G P E B 2  
**Textbooks:** *Managing Programming People*  
by Metzger, P.W.  
Selected readings  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

**Topics In Software Engineering (CS 889)**

**Codes:** G P E Y 2  
**Textbooks:** Varies by topic  
**Tools:** Varies by topic

**Additional Information:**

Software Engineering MCS emphasis was established in 1988. Its requirements are: CS 580, 881, 882, internship, and practicum. The electives are: 6 hours such as CS 611, 684, 886, and special topics. Special topics offered in 1987-88

were:

Software Configuration Management and Software Project Management and the special topic in 1989-90 was Software Reuse.



## Kentucky

---

### Northern Kentucky University

Department of Mathematics and Computer Science  
Highland Heights, KY 41076

**Degrees:** BS CS

**Contact:** Dr. Charles E. Frank  
Coordinator  
(606) 572-5320  
User ID: frank@nkuvax  
Network: BITNET

**Update:** February 1990

**Courses:** **Software Engineering (CSC 440)**  
**Codes:** U P R T 5  
**Textbooks:** *Software Engineering: A Beginner's Guide*  
by Pressman, Roger S.  
**Tools:** C, Modula-2, dBASE III+,  
Sun, PC

---

### University of Louisville

J.B. Speed Scientific School  
Information Science & Data Processing  
Louisville, KY 40292

**Degrees:** BS IS

**Contact:** Dr. Ronald A. Mann  
Professor and Chair  
(502) 588-7520  
User ID: RAMANN02@ULKYVX  
Network: BITNET

**Update:** February 1990

**Courses:** **Analysis & Design of Information Systems (ISDP 510)**  
**Codes:** U P R Y 4  
**Textbooks:** *Structured Techniques*  
by Martin and McClure  
*Systems Analysis & Design, 2nd ed.*  
by Whitten and Bentley  
**Tools:** Excelsior  
IBM PS/2 Model 50

**Special Topics: Programming in the Large (ISDP 500)**

**Codes:** U P E B 2  
**Textbooks:** *Programming in Ada*  
by Barnes, John Gilbert Presslie  
*Software Components with Ada*  
by Booch, Grady  
*Software Engineering with Ada*  
by Booch, Grady  
**Tools:** IBM PS/2 Model 50, VAX  
Ada

---

**Western Kentucky University**

Ogden College of Science, Technology and Health  
Department of Computer Science  
Bowling Green, KY 42101

**Degrees:** BS, MS

**Contact:** Dr. Kenneth Modesitt  
Professor and Department Head  
(502) 745-4642

**Update:** October 1988

**Courses:** **Structured Systems Analysis (CS 448)**  
**Codes:** B P E Y 5

**Introduction to Computer Sciences: Ada (CS 245)**

**Codes:** U P R Y 3

**Textbooks:** *Ada: An Introduction*  
by Saib, S.

**Tools:** Ada  
C, FORTRAN  
VAX, PCs  
Anatool, Excelerator (Index Technology)  
CASE Tools: ProMod, DesignAid (Nastec), Analyst Toolkit

## Louisiana

---

**Louisiana State University at Shreveport**  
College of Science  
Department of Computer Science  
Shreveport, LA 71115

**Degrees:** BS CS, MS SYST

**Contact:** Dr. Dave Foley  
Associate Professor of Computer Science  
(318) 797-5184

**Update:** February 1990

**Courses:** **Software Engineering Project (CSC 480/481)**  
**Codes:** U P R T 5  
**Textbooks:** *Software Engineering, 3rd ed.*  
by Sommerville, Ian  
**Tools:** Turbo Pascal 5.5  
IBM PC compatibles

---

**Louisiana Tech University**  
Department of Computer Science  
Ruston, LA 71272

**Degrees:** BS, MS

**Contact:** Prof. Margaret Schaar  
Assistant Professor  
(318) 257-2298

**Update:** September 1988

**Courses:** **Structured Design (CS 203)**  
**Codes:** U P R O 4  
**Textbooks:** *Software Engineering: The Production of Quality Software*  
by Pfleeger, Shari Lawrence  
**Tools:** Sun, IBM PC  
Ada, C

**Software Methodology (CS 460)**  
**Codes:** U P E Y 5  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** Sun, IBM PC  
Ada, C

**System Design (CS 540)**  
**Codes:** G P E Y 4  
**Tools:** Sun, IBM PC  
Ada, C

**Additional Information:**  
Structured Design is offered twice a year.

---

**Northeast Louisiana University**  
Department of Computer Science  
Monroe, LA 71209-0575

**Degrees:** BS CS

**Contact:** Dr. Alan Yaung  
Assistant Professor  
(318) 342-2186  
User ID: CNYAUNG@NLU.EDU  
Network: CSNET

**Update:** February 1990

**Courses:** **Software Engineering (CS 460)**  
**Codes:** U P R Y 4  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** PC, VAX 11/780, Macintosh  
Pascal

---

**University of Southwestern Louisiana**  
The Center for Advanced Computer Studies  
Computer Science and Engineering  
Lafayette, LA 70504-4330

**Degrees:** BS CS, MS CS, MS CE, PhD CS, PhD CE

**Contact:** Dr. Steve Landry  
Associate Director  
(318) 231-6768  
User ID: spl@cacs-usl.edu  
Network: Internet

**Update:** February 1990

**Courses:** **Introduction to Software Methodology (CMPS 453)**  
**Codes:** B P E Y 4  
**Textbooks:** *Elements of Programming Style*  
by Keringhan & Plaugher  
*Software Engineering - A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** UNIX, make, rcs, shell-script, awk, profile

**Software Methodology (CMPS 553)**  
**Codes:** G P E Y 5  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
*Software Engineering, 2nd Ed.*  
by Pressman, Roger S.  
*The Practical Guide to Structured Systems Design*  
by Meier

**Advanced Software Methodology (CMPS 653)**  
**Codes:** G P E D 5  
**Textbooks:** Selected readings

## Maryland

---

### University of Maryland

Division of Computer, Mathematical, and Physical Sciences  
Department of Computer Science  
College Park, MD 20742

**Degrees:** BS, MS, PHD

**Contact:** Dr. H. Dieter Rombach  
Assistant Professor  
(301) 454-8974  
User ID: dieter@cs.umd.edu  
Network: Internet

**Update:** September 1988

**Courses:** **Software Design and Development (CMSC 435)**

**Codes:** B P E T 6

**Textbooks:** *Software Engineering: Planning for Change*  
by Lamb, David  
*Software Product Assurance: Techniques for Reducing Software Risk*  
by Bryan and Siegel

**Tools:** VAX/UNIX  
C, Pascal  
Verdix Ada

**Computer Science I (CMSC 112)**

**Codes:** U N R T 6

**Textbooks:** *Pascal Algorithms*  
by Reingold and Reingold

**Tools:** VAX/UNIX  
VAX Pascal Compiler

**Computer Science II (CMSC 113)**

**Codes:** U P R T 6

**Software Design and Development in Ada (CMSC 838)**

**Codes:** G P E D 3

**Textbooks:** *Programming in Ada*  
by Barnes, John Gilbert Presslie  
*Software Engineering with Ada*  
by Booch, Grady

**Tools:** Verdix Ada  
VAX 8600

**A Quantitative Approach to Software Management and Engineering (CMSC 735)**

**Codes:** G P E Y 2

**Textbooks:** *IEEE Tutorial on Models and Metrics for Software Management and Engineering*  
by Basili, Victor R.  
*Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

**Introduction to AI Programming (CMSC 421)**

**Codes:** U N E Y 6

**Textbooks:** *Artificial Intelligence Programming*  
by Charniak, Riesbeck, McDemott, and Meehan  
*Programming in Prolog*  
by Clocksin, W. F. and Mellish, C. S.

Tools:       MicroVAXes  
              LISP, Prolog

**Additional Information:**

The department offers other software engineering related courses, among them: Theory of Language Translation (CMSC 430), Theory of Programming Languages (CMSC 630), as well as a variety of software engineering related seminars.

## Massachusetts

---

### **Boston University**

College of Engineering  
Department of Electrical, Computer, and Systems Engineering  
Programs in Systems Engineering, Computer Engineering, Electrical Engineering  
Boston, MA 02215

**Degrees:** MS EE, MS CE, MS SYSE, PHD E

**Contact:** Dr. John W. Brackett  
Coordinator, Soft. Eng. Graduate Program  
(617) 353-5898  
User ID: jwb@buenga.bu.edu

**Update:** October 1988

**Courses:** **Advanced Data Structures (SC 504)**

**Codes:** B N B Y 1  
**Textbooks:** Selected readings  
**Tools:** DEC VAX Ada  
Encore  
VAX 785

**Software System Design (SC 511)**

**Codes:** U P R Y 4  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** DEC VAX Ada  
Encore  
VAX 785  
Workstations and PC using analysis and design support tools

**Applications of Formal Methods (SC 517)**

**Codes:** G N R Y 1  
**Textbooks:** *Software Specification Techniques*  
by Gehani, Narain and McGettrick, Andrew D.  
*The Science of Programming*  
by Gries, David

**Software Project Management (SC 518)**

**Codes:** G P R Y 2  
**Textbooks:** *IEEE Tutorial on Software Project Management, 3rd ed.*  
by Parikh, Girish and Zvegintzov, Nicholas  
*Software Engineering Economics*  
by Boehm, Barry W.  
**Tools:** IBM PC on VAX 785

**The Computer as a System Component (SC 714)**

**Codes:** G P R Y 1  
**Textbooks:** Selected readings  
**Tools:** DEC VAX Ada  
Encore  
VAX 785

**Software Engineering Project (SC 912)**

**Codes:** G P R Y 4  
**Tools:** DEC VAX Ada  
Encore

IBM PC  
VAX 785  
Workstations  
Ada predominantly, but depends on project

**Additional Information:**

We also teach 2 courses, SC 465 and EK 215, that use the Ada programming language to teach software engineering concepts.

All new courses (SC 504, SC 517, SC 518) were effective as of January 1988.

The master's program in software engineering is MS SYSE with a Software Engineering option. It will be renamed Software Systems Engineering effective 1989.

The PHD with research specialization in Software Engineering is offered, but the degree is officially called "PHD in Engineering."

In Software Project Management (SC 518), we use Super project on IBM PC, VAX Project Manager on VAX, and WICOMO (a cost estimation tool on the IBM PC).

---

**Massachusetts Institute of Technology**

School of Engineering  
Department of Electrical Engineering and Computer Science  
Program in Computer Science  
Cambridge, MA 02139

**Degrees:** BS, MS, PHD

**Contact:** Prof. F. J. Corbato  
Associate Head for Computer Science and Engineering  
(617) 253-6001

**Update:** September 1988

**Courses: Laboratory In Software Engineering (6.170)**

**Codes:** U P R T 1

**Textbooks:** *Abstraction and Specification in Program Development*  
by Liskov, Barbara and Guttag, John

**Tools:** CLU  
DEC 20

**Computer Language Engineering (6.035)**

**Codes:** U P O Y 6

**Textbooks:** *Compilers, Principles, Techniques, and Tools*  
by Aho, Alfred V., Sethi, Ravi, and Ullman, Jeffrey D.

**Tools:** CLU  
DEC 20

**Additional Information:**

Students must take either Computer Language Engineering or an operating systems course.

---

**Northeastern University (Entry 1)**

College of Computer Science  
Boston, MA 02115

**Degrees:** BS, BA, MS, PHD

**Contact:** Prof. Richard Rasala  
Director of Undergraduate Studies  
(617) 437-2462



User ID: rasala@corwin.ccs.northeastern.edu

**Update:** February 1990

**Courses: Software Design and Development (COM 1205)**

**Codes:** U P R A 6

**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.

**Tools:** Think Pascal, Think C, or Sun C  
Macintosh SE and Sun workstations  
Hypercard  
Software Through Pictures

**Software Design and Development (COM 3205)**

**Codes:** G N E Y 5

**Textbooks:** *Abstraction and Specifications in Program Development*  
by Liskov, Barbara and Guttag, John  
*Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.  
*Software Engineering Concepts*  
by Fairley, Richard E.

**Tools:** Sun workstations, PC, Macintosh SE  
C, Lisp, Pascal  
Software Through Pictures, Teamwork

**Requirements Analysis and Specification (COM 3210)**

**Codes:** G P E Y

**Textbooks:** *Abstraction and Specification in Program Development*  
by Liskov, Barbara and Guttag, John

**Tools:** Sun workstations, PC, Macintosh SE  
C, Lisp, Pascal  
Software Through Pictures, Teamwork

**Software Testing, Verification and Validation (COM 3220)**

**Codes:** G P E Y

---

**Northeastern University (Entry 2)**

College of Engineering  
Department of Industrial Engineering and Information Sciences  
Engineering Software Design  
Boston, MA 02115

**Degrees:** MS CSE

**Contact:** Prof. Mieczyslaw M. Kokar  
Program Coordinator  
(617) 437-4849  
User ID: Kokar@Northeastern.edu

**Update:** February 1990

**Courses: Engineering Project Management (IIS 3217)**

**Codes:** G N B B 5

**Textbooks:** *Project Management*  
by Meredith, J.R. and Mantel S.J.

**Tools:** Project Workbench for the IBM PC

**Software Engineering I (IIS 3637)**

**Codes:** G P R B 4

**Textbooks:** *Software Engineering, 2nd ed.*

by Sommerville, Ian  
*Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.  
Tools: Excelerator  
IBM PC

**Software Engineering II (IIS 3625)**  
Codes: G P R B 4  
Textbooks: *Analyzing Systems*  
by Kowal  
*Using Excelerator for Systems Analysis & Design*  
by Whitten and Bentley  
Tools: Excelerator  
IBM PC

**Software Engineering Project (IIS 3651)**  
Codes: G P R Y 4

**Additional Information:**

The MS CSE degree has a specialization in Engineering Software Design.  
IIS 3217 is offered in the Fall quarter on the Boston campus and in the  
Spring quarter on the Burlington campus.

---

**University of Massachusetts (Entry 1)**

School of Engineering  
Department of Electrical and Computer Engineering  
Program in Electrical Engineering  
Amherst, MA 01003

**Degrees:** BS CSE, BS EE, MS, PHD

**Contact:** Jan Cuny  
(413) 548-9120

**Update:** October 1988

**Courses:** **Design and Analysis of Computer Algorithms (ECE 672)**  
Codes: G P E D 1  
Textbooks: *The Design and Analysis of Computer Algorithms*  
by Aho, Alfred V., Hopcroft, John E. and Ullman, Jeffrey D.  
Tools: Data General Eagle

**Performance Evaluations (ECE 673)**  
Codes: G P E Y 1

---

**University of Massachusetts (Entry 2)**

Department of Computer and Information Sciences (COINS)  
Amherst, MA 01003

**Contact:** Jan Cuny  
(413) 548-9120

**Update:** November 1988

**Courses:** **Software Engineering (COINS 520)**  
Codes: B P X Y 5  
Textbooks: *Selected readings*  
*Software Engineering with Modula-2 and Ada*

Tools: by Wiener, Richard and Sincovec, Richard  
Students' choice: Ada, Lisp, C, Pascal  
Students' choice

**Software Engineering Practicum (COINS 620)**  
Codes: G P X B 3

**Programming Methodology (COINS 320)**  
Codes: U P X O 10  
Textbooks: *Software Engineering with Modula-2 and Ada*  
by Wiener, Richard and Sincovec, Richard  
Tools: DEC Ada  
VAXStation 2000  
PIC/ADL

---

**University of Massachusetts at Boston**  
Department of Mathematics and Computer Science  
Boston, MA 02125

**Degrees:** BS, MS

**Contact:** Dr. Dan Simovici  
Director of the Graduate Program  
(617) 929-7966

**Update:** None

**Courses:** **Software Engineering I (650)**  
Codes: G P R Y 1  
Tools: UNIX on VAX 750

**Software Engineering II (660)**  
Codes: G P R Y 1  
Tools: UNIX on VAX 750

**Software Engineering Laboratory I (651)**  
Codes: G P R Y 1  
Tools: UNIX on VAX 750

**Software Engineering Laboratory II (661)**  
Codes: G P R Y 1  
Tools: UNIX on VAX 750

---

**Worcester Polytechnic Institute**  
Computer Science  
Worcester, MA 01609

**Degrees:** PHD, MS, BS CS/EE, MS BS M

**Contact:** Dr. Robert E. Kinicki  
Chairman  
(508) 831-5357  
User ID: Kinicki@wpi-cs.wpi.edu  
Network: CSNET

**Update:** February 1990

**Courses:** **Software Engineering (CS 4733)**

**Codes:** U P O Y 5  
**Textbooks:** *Software Engineering - A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** PC, Sun, Macintosh, Encore  
Pascal, C  
Teamwork

**Human Computer Interaction (CS 3041)**  
**Codes:** U P O Y 5  
**Textbooks:** *Designing the User Interface*  
by Shneiderman, Ben  
**Tools:** Pascal or C

**Database Design (CS 4431)**  
**Codes:** U P E B 5  
**Textbooks:** *Fundamentals of Database Systems*  
by Elmasvi and Navathe  
**Tools:** SQL, Entity Relational Model

**Software Engineering (CS 541)**  
**Codes:** G P O Y 5  
**Textbooks:** Selected readings  
**Tools:** Mainframes and PCs  
Pascal, C, or Ada  
Teamwork

**Database Management Systems (CS 542)**  
**Codes:** G P E Y 5  
**Textbooks:** *Database and Knowledge Based Systems*  
by Ullman  
**Tools:** SQL, Entity Relational Model

# Michigan

---

## Andrews University

Department of Computer Information Science  
Berrien Springs, MI 49104-0360

**Degrees:** MS SE

**Contact:** Dr. Daniel R. Bidwell  
Graduate Director for Computer Science  
(616) 471-3425  
User ID: bidwell@Andrews.edu

**Update:** February 1990

**Courses:** **Programming Project Management (INSY 645)**

**Codes:** G P R Y 4

**Textbooks:** *Software Configuration Management: Coordination for Team Productivity*  
by Babich, W.A.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
*The Program Development Process: The Programming Team PART II*  
by Aron, J.D.

**Software Engineering I (INSY 541)**

**Codes:** G P R Y 5

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** Demo II

**Software Engineering II (INSY 542)**

**Codes:** G P R Y 5

**Textbooks:** *Designing User Interfaces for Software*  
by Dumas  
*Developing Effective User Documentation*  
by Simpson and Casey  
*Writing Better Computer User Documentation*  
by Brockmann, R. John

**Computer Architecture (COSC 565)**

**Codes:** G P R Y 5

**Textbooks:** *Computer Systems Architecture*  
by Beck

**Operating Systems I (COSC 461)**

**Codes:** B P R Y 5

**Textbooks:** *Operating Systems Design and Implementation*  
by Tanenbaum, A.S.

**Tools:** Minix operating system

**Systems Analysis I (INSY 481)**

**Codes:** B P R Y 5

**Textbooks:** *Systems Analysis and Design Methods*  
by Whitten, Bentley, and Ho

**Systems Analysis II (INSY 482)**

**Codes:** B P R Y 5

**Database Systems (INSY 472)**

Codes: B P R Y 5  
Textbooks: *Databases Systems for Management*  
by Courtney, J.F.  
Tools: Dbase, Informix for UNIX

**Data Structures (INSY 472)**

Codes: B P R Y 5  
Textbooks: *Data Structures: An Advanced Approach Using C*  
Tools: C, Fortran, Pascal  
PC  
UNIX

---

**Grand Valley State University**

Science and Mathematics  
Department of Mathematics and Computer Science  
MS in Computer Information Systems (emphasis in software engineering)  
Allendale, MI 49401

**Degrees:** MS CIS

**Contact:** Prof. Joseph J. Adamski  
Associate Professor  
(616) 895-2046  
User ID: 21874jja@msu.bitnet  
Network: BITNET

**Update:** February 1990

**Courses:** **Systems Analysis (650)**  
Codes: G N R Y 2

---

**Michigan State University**

College of Engineering  
Computer Science Department  
Program in Computer Science  
East Lansing, MI 48824-1027

**Degrees:** BS, MS, PHD

**Contact:** Prof. John J. Forsyth  
Assoc. Professor and Assoc. Chairperson  
(317) 355-1646

**Update:** October 1987

**Courses:** **Design of Language Processors I (CPS 451)**  
Codes: U P R Y 6  
Textbooks: *Software Engineering Concepts*  
by Fairley, Richard E.  
*Theory and Practice of Compiler Writing*  
by Tremblay and Sorenson  
Tools: Sun 3 file server  
Workstations on Ethernet  
C, UNIX

**Design of Language Processors II (CPS 452)**

Codes: U P R Y 6  
Textbooks: *Software Engineering Concepts*

by Fairley, Richard E.  
*Theory and Practice of Compiler Writing*  
by Tremblay and Sorenson  
Tools: Sun 3 file server  
Workstations on Ethernet  
C, UNIX

**Design of Language Processors III (CPS 453)**

Codes: U P R Y 6  
Textbooks: *Software Engineering Concepts*  
by Fairley, Richard E.  
*Theory and Practice of Compiler Writing*  
by Tremblay and Sorenson  
Tools: Sun 3 file server  
Workstations on Ethernet  
C, UNIX

**Design of Database Systems III (CPS 484)**

Codes: U P E Y 2  
Textbooks: *Database Systems and Concepts*  
by Silbersatz and Korth  
*Software Engineering Concepts*  
by Fairley, Richard E.  
Tools: C, UNIX, LEX

**Design of Database Systems I (CPS 483)**

Codes: U P E Y 2  
Textbooks: *Files & Databases*  
by Smith and Bernes  
*Software Engineering Concepts*  
by Fairley, Richard E.  
Tools: C, UNIX, LEX

**Systems Software Development (CPS 316)**

Codes: U P R T 2  
Textbooks: *Software Engineering Concepts*  
by Fairley, Richard E.  
*Systems Software*  
by Beck  
Tools: C, UNIX  
Sun computers

**Additional Information:**

A full academic year sequence is offered every year for Design of Language Processors I, II, and III.

---

**Michigan Technological University**  
College of Sciences and Arts  
Department of Computer Science  
Houghton, MI 49931

**Degrees:** BS CS, MS CS

**Contact:** Dr. Linda M. Ott  
Associate Professor  
(906) 487-2187  
User ID: linda@mtu.edu

**Update:** October 1988

**Courses:** **Software Engineering (CS550)**  
**Codes:** G P R Y 8  
**Textbooks:** *Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.  
**Tools:** Sequent Balance 8000 running Dynix

**Software Engineering (CS465)**  
**Codes:** U P E Y 3  
**Textbooks:** *Software Engineering, 2nd ed.*  
by Sommerville, Ian  
**Tools:** CC  
Sequent Balance 8000 running Dynix  
C

**Systems Software Project (CS341)**  
**Codes:** U P R T 1  
**Textbooks:** *Software Engineering: A Beginner's Guide*  
by Pressman, Roger S.  
**Tools:** Pascal  
Sequent Balance 8000 running Dynix

---

**University of Michigan-Dearborn**  
School of Engineering  
Department of Industrial and Systems Engineering  
Dearborn, MI 48128

**Degrees:** BSE ISE, MSE ISE

**Contact:** Dr. S. K. Kachhal  
Chairman  
(313) 593-5272

**Update:** None

**Courses:** **Software Engineering (I&SE 553)**  
**Codes:** G P E Y 1  
**Textbooks:** *Controlling Software Projects: Management Measurement and Estimation*  
by DeMarco, Tom  
*Software Design and Development*  
by Gilbert, Philip  
**Tools:** Michigan Terminal System (Amdahl)

---

**Wayne State University**  
College of Engineering  
Department of Electrical and Computer Engineering  
Detroit, MI 48202

**Degrees:** BS, MS, PHD

**Contact:** Prof. Jerome Meisel  
Acting Chair  
(313) 577-3920

**Update:** None

**Courses:** **Engineering Software Design (ECE 660)**  
**Codes:** G P X Y 1  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.



Tools:       Amdhal 470 V8  
              IBM 3081  
              IBM 4381  
              MTS (Michigan Terminal System)

**Additional Information:**

The course ECE 660 has been taught both at campus and at the Ford premises under Ford/WSU Master's program in Electronics and Computer Control System. The students have been using PSL/PSA from ISDOS.

---

**Western Michigan University**  
College of Arts and Sciences  
Department of Computer Science  
Kalamazoo, MI 49008-5021

**Degrees:** BS CS, MS CS

**Contact:** Dr. Mark Kerstetter  
Associate Professor  
(616) 387-5658  
User ID: kerstetter@gw.wmich.edu

**Update:** October 1988

**Courses:** **Software Systems Development (544)**

Codes:       B P B O 8

Textbooks:   *Software Engineering: A Practitioner's Approach, 2nd ed.*  
              by Pressman, Roger S.  
              *The Mythical Man-Month: Essays on Software Engineering*  
              by Brooks, Frederick P.

Tools:       C, COBOL, FORTRAN, Pascal  
              IBM-PC/XT/AT  
              IBM PS/2  
              Macintosh  
              VAX/UNIX  
              VAX/VMS  
              dBase

**Additional Information:**

Software Systems Development uses real projects and is offered 3 times per year. Therefore, student teams work on a variety of machines and with a variety of languages and compilers. Each team of 4 to 5 students typically works on a different project. Documentation is required including: abstract, planning document, requirements document, preliminary design document, user's manual, and maintenance manual. Each team must make a one-hour presentation to the instructor, client, classmates, and invited guests during "presentation

day,"

which takes place at the end of the semester.

## Minnesota

---

### College of St. Thomas

Computer Science  
Master of Software Design and Development  
St. Paul, MN 55105

**Degree:** MSDD, MS

**Contact:** Dr. Bernice Folz  
Professor and Dean  
(612) 647-5367

**Update:** February 1990

**Courses:** **Technical Communications (CS 500)**

**Codes:** G N R T 3

**Textbooks:** *Handbook of Technical Writing*  
by Brusaw, Alred, and Olin  
*How to Write a Usable User Manual*  
by Weiss  
*Manual for Technical Communications*  
*Readings for Technical Writers*  
by Journet and Kling

**Software Engineering Methodologies (CS 510)**

**Codes:** G N R T 3

**Textbooks:** *Algorithms + Data Structures = Programs*  
by Wirth, N.  
*Classics in Software Engineering*  
by Yourdan  
*Data Structure and Algorithms*  
by Aho, Hopcroft, and Ullman  
*Software Engineering Concepts*  
by Fairley, Richard E.  
*Software Engineering in Ada*  
by Cummings, R.

**Software Productivity Tools (CS 520)**

**Codes:** G P R T 3

**Textbooks:** *A Guide to INGRES*  
by Date, Chris  
*Analysis and Design of Information Systems*  
by Senn  
*CASE - Using Software Development Tools*  
by Fisher, Alan S.  
*Fourth Generation Languages, Vol. I*  
by Martin  
INGRES Manuals from Relational Technology

**Tools:** *Using Excelerator for Systems Analysis and Design*  
by Whitten and Bentley  
IBM - AT, PS/2  
DEC VAX/VMS  
Excelerator, INGRES + 4GL Components, Analyst Helper,  
ORACLE, PSL/PSA, HOS.UseIt

**DBMS and Design (CS 530)**

**Codes:** G P R T 3

Textbooks: *Database Systems Concepts*  
by Karth and Silberschatz

Tools: DEC VAX/VMS, IBM PS/2, ORACLE, INGRES, Informix

**Systems Analysis and Design I (CS 540)**

Codes: G P R T 3

Textbooks: *Modern Structured Analysis*  
by Yourdon, Edward N.  
*Systems Analysis and Design*  
by Kendall and Kendall

Tools: Macintosh - ICONIX  
IBM - AT, PS/2 - E...celerator

**Data Modeling and Information Analysis (CS 541)**

Codes: G N E Y 1

Textbooks: ACM TODS, Vol. 1, No. 1, 1976  
*Information Analysis Concepts and Methodology*  
by Control Data Corp.  
*The Entity-Relationship Model - Toward a Unified View of Data*  
by Chen, Peter

Tools: IBM - AT  
PRECISE (CDC)

**Software Project Management (CS 600)**

Codes: G P R T 3

Textbooks: *Software Engineering Project Management - Tutorial*  
by Thayer, R. H.

Tools: IBM AT  
Timeline, Primevera

**Operating Systems Design (UNIX and C) (CS 610)**

Codes: G P E Y 3

Textbooks: *Operating Systems Concepts*  
by Peterson & Silberschatz  
*Operating Systems Design and Implementation*  
by Tannenbaum

Tools: DEC VAX/VMS  
C Language

**Real-Time Systems and Applications (CS 612)**

Codes: G P E Y 1

Textbooks: *Introduction to Real-Time*  
by Allworth and Zobel

Tools: Macintosh - ICONIX

**Graphics (CS 620)**

Codes: G P E Y 3

Textbooks: *Computer Graphics*  
by Hearn and Baker

Tools: IBM - PC, VAX/VMS  
Turbo Pascal, GK2000, Picture

**Telecommunications (CS 625)**

Codes: G P E Y 3

Textbooks: *Computer Networks*  
by Tannenbaum

**Artificial Intelligence and Knowledge Based Systems (CS 635)**

Codes: G P E T 3

Textbooks: *Artificial Intelligence and the Design of Expert Systems*  
by Lugert & Stubblefield

Tools: DEC VAX/VMS, IBM AT, Macintosh, LISP, Prolog, Allegro

**Knowledge Based Systems II (CS 636)**  
**Codes:** G P E Y 3  
**Textbooks:** *A Guide to Expert Systems*  
by Waterman  
**Tools:** IBM PC  
PC+

---

**St. Cloud State University**  
College of Science and Technology  
Department of Computer Science  
Computer Science  
St. Cloud, MN 56301-4498

**Degrees:** BS CS

**Contact:** Dr. Annette D. Schoenberger  
Associate Professor  
(612) 255-4966  
User ID: Annette%TIGGER@MSUS1  
Network: BITNET

**Update:** February 1990

**Courses:** **Software Engineering I (CSCI 420-520)**  
**Codes:** B P E B 1  
**Textbooks:** Selected readings  
*Software Engineering, Planning for Change*  
by Lamb, David  
*Software Engineering with Ada (2nd Edition)*  
by Booch, Grady  
**Tools:** Ada, Pascal  
Design Notations; Jackson, Harel

**Software Engineering II (CSCI 421-521)**  
**Codes:** B P E B 1  
**Textbooks:** Selected readings  
*Software Engineering with Ada (2nd Edition)*  
by Booch, Grady

**Software Engineering III (CSCI 422-522)**  
**Codes:** B P O B 1  
**Textbooks:** Selected readings  
*Software Engineering, Planning for Change*  
by Lamb, David  
*Software Engineering with Ada (2nd Edition)*  
by Booch, Grady  
**Tools:** Ada, Pascal  
Design Notation: Jackson, Harel

**Software Engineering Project (CSCI 430-530, 431-531, 431-532)**  
**Codes:** B P B B 1  
**Textbooks:** Language reference manuals  
**Tools:** Ada, Pascal

---

**University of Minnesota**  
Institute of Technology  
Department of Computer Science  
Program in Computer Science

Minneapolis, MN 55455

**Degrees:** BS, MS, PHD

**Contact:** Dr. David Fox  
Head, Computer Science  
(612) 625-0726

**Update:** June 1987

**Courses:** **Software Engineering (I) (Csci 5180)**

**Codes:** B P E Y 6

**Textbooks:** *Abstraction and Specification in Program Development*  
by Liskov, Barbara and Guttag, John

**Tools:** Ada  
Sun  
MSG

**Software Engineering (II) (Csci 5181)**

**Codes:** B P E Y 6

**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady

**Tools:** Ada  
Sun  
MSG

**Software Engineering (III) (Csci 5199)**

**Codes:** B P E Y 3

**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady  
*Software Testing and Evaluation*  
by DeMillo, R.A. et al.  
*Software Validation: Inspection - Testing - Verification - Alternatives*  
by Hausen, H.L.  
*The Art of Software Testing*  
by Myers, Glenford J.

**Tools:** Ada  
Sun  
MSG

**Software Requirement, Design and Maintenance (Csci 5199/8199)**

**Codes:** B P E B 3

**Textbooks:** *Handbook of Software Engineering*  
by Vick, Charles R. and Ramamoorthy, C.V.  
*Software Design Strategies*  
by Bergland, Glenn D. and Gordon, Ronald D.

**Software Verification and Validation, Metrics (Csci 5199/8199)**

**Codes:** B P E B 3

**Textbooks:** *IEEE Tutorial: Software Testing and Validation Techniques*  
by Miller, Edward and Howden, William E.  
*Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.  
*Software Testing and Evaluation*  
by DeMillo, R.A. et al.  
*Software Validation: Inspection - Testing - Verification - Alternatives*  
by Hausen, H.L.  
*The Art of Software Testing*  
by Myers, Glenford J.

**Software Engineering with Ada (Csci 5199/8199)**

**Codes:** B P E Y 3

**Textbooks:** *Software Engineering with Ada*

Tools:           by Booch, Grady  
                  Ada  
                  Sun

**Software Specification** (Csci 5199/8199)

Codes:       B P E Y 3

Textbooks:   *Software Specification Techniques*  
              by Gehani, Narain and McGettrick, Andrew D.

**Additional Information:**

We also have weekly seminars on various aspects of software engineering.

## Missouri

---

### Washington University

Sever Institute of Technology  
Department of Computer Science  
St. Louis, MO 63130

**Degrees:** BS, MS, SCD

**Contact:** Dr. Gruia Catalin Roman  
Associate Professor  
(314) 889-6190  
User ID: gcr@wucs2.wustl.edu

**Update:** February 1990

**Courses:** **Distributed System Design (CS 576S)**  
Codes: G P E B 2

**Modular Programming (CS 545S)**  
Codes: G P E B 5

**Programming Systems and Language (CS 455)**

Codes: B P R O 11

Textbooks: *Coordinated Computing: Tools and Techniques for Distributed Software*  
by Filman, Robert E. and Friedman, Daniel P.  
*Programming Languages: Design and Implementation*  
by Pratt, Terrence W.

Tools: DEC Ada, Franz Lisp, Prolog  
MicroVAX II

**Research Seminar on Distributed System Design (CS 673.1 - CS 673.6)**

Codes: G N E T 2

**Software Engineering Workshop (CS 456)**

Codes: B P R O 11

Textbooks: *Programming in Ada*  
by Barnes, John Gilbert Presslie  
*Programming in Modula-2*  
by Wirth, Niklaus

Tools: DEC Ada, DECSRC Modula-2+  
Micro VAX II  
VAX 11/750  
Modula-2, Smalltalk

### Additional Information:

Programming Systems and Languages and Software Engineering Workshop are  
offered twice yearly.

## Montana

---

### University of Montana

College of Arts and Sciences  
Department of Computer Science  
Missoula, MT 59812-1008

**Degrees:** BS CS, MS CS

**Contact:** Prof. Alden Wright  
Professor of Computer Science  
(406) 243-4790  
User ID: apple.com/lumtlcs\_ahw  
Network: Usenet

**Update:** February 1990

**Courses:** Implementation (CS 543)  
Codes: G P R Y 4  
Textbooks: Selected readings

#### Requirements and Specifications (CS 541)

Codes: G N R Y 4  
Textbooks: *Modern Structured Analysis*  
by Yourdon, Edward N.  
Tools: Excelerator  
IBM AT

#### Design (CS 542)

Codes: G P R Y 4  
Textbooks: *Structural Design*  
by Yourdon, Edward N. and Constantine, Larry L.

#### Formal Semantics and Specification (CS 539)

Codes: G P O B 2  
Textbooks: *Program Construction & Verification*  
by Backhouse, R. C.  
*The Science of Programming*  
by Gries, David

#### Advanced Programming Languages - Object Oriented Design and Programming (CS 535)

Codes: G P E B 2  
Textbooks: *Object-Oriented Software Construction*  
by Meyer  
Tools: Eiffel language  
VAX 785 running ULTRIX



## New Hampshire

---

**Dartmouth College**

Department of Mathematics and Computer Science  
Hanover, NH 03755

**Degrees:** BA, MS, PHD

**Contact:** Samuel W. Bent  
Associate Professor  
(603) 646-2760  
User ID: sam.bent@dartmouth.edu

**Update:** October 1988

**Courses:** **Software Design and Implementation (CS 23)**

**Codes:** U P R O 2

**Textbooks:** *Programming Pearls*  
by Bentley, Jon Louis  
*Software Engineering Concepts*  
by Fairley, Richard E.

**Tools:** C, Lightspeed Pascal  
CONVEX  
Macintosh  
VAX 11/785  
AWK, LEX

**Additional Information:**

Software Design and Implementation is offered 2 terms a year. We previously had one course with data structures and a large programming project. We have subdivided it. Software Design and Implementation will emphasize software tools.

## New Jersey

---

### Fairleigh Dickinson University

College of Science and Engineering  
Department of Mathematics and Computer Science  
Teaneck, NJ 01666

**Degrees:** BS, BSE, MS

**Contact:** Dr. Gertrude Levine  
Associate Professor  
(201) 692-2020

**Update:** February 1990

**Courses:** **Advanced Programming Language Concepts Using Ada (CS 439)**

**Codes:** U P E D 1

**Textbooks:** *Software Engineering Concepts with Ada*  
by Booch, Grady

**Tools:** Ada, DEC debugger, LSE  
DEC workstations

**Special Topics in Ada (CS 847)**

**Codes:** G P R Y 1

**Textbooks:** *Programming in Ada*  
by Barnes, John Gilbert Presslie

**Tools:** Ada, DEC debugger, LSE  
DEC workstations

---

### Monmouth College

Department of Mathematics/Computer Science  
West Long Branch, NJ 07764

**Degrees:** MS SE

**Contact:** Prof. Ed McCrohan  
Director

**Update:** None

**Courses:** **Network Design and Protocols I (SE 510)**

**Codes:** G X R X 1

**Network Design and Protocols II (SE 511)**

**Codes:** G X R X 1

**Operating System Implementation (SE 515)**

**Codes:** G X R X 1

**Software Engineering I (SE 516)**

**Codes:** G X R X 1

**Software Engineering II (SE 517)**

**Codes:** G X R X 1

**System Project Implementation (SE 525)**

**Codes:** G X R X 1

**Software Project Management (Video Course)**  
Codes: X X X X

---

**Montclair State College**

School of Mathematics and Computer Science  
Department of Mathematics and Computer Science  
Upper Montclair, NJ 07043

**Degrees:** BS, MA CS

**Contact:** Prof. K. Wolff  
Chairperson  
(201) 893-5132

**Update:** None

**Courses:** **Software Engineering and Reliability (Y0701 594)**

**Codes:** G P E B 1

**Textbooks:** *Ethnotechnical Review Handbook*  
by Freedman, Daniel P.  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Software Engineering: Design, Reliability and Management*  
by Shooman, Martin L.  
*Software Reliability: Principles and Practices*  
by Myers, Glenford J.

**Programming Languages (Y0701 484)**

**Codes:** U P E B 5

**Textbooks:** *Programming Languages: Design and Implementation*  
by Pratt, Terrence W.

**Tools:** Ada

---

**Stockton State College**

Professional Studies  
Information and Computer Sciences  
Pomona, NJ 08240

**Degrees:** BA O, BS CS, BS IS

**Contact:** Murray R. Kirch  
Professor of Comp. Sci. & Mathematics  
(609) 652-4353  
User ID: kirch@pilot.njin.net  
Network: Internet

**Update:** February 1990

**Courses:** **Software Engineering with Ada (INFO 4130)**

**Codes:** U P E Y 1

**Textbooks:** *Ada as a Second Language*  
by Cohen, Norman H.  
*Software Engineering with Ada*  
by Booch, Grady

**Tools:** Briefcase (to be replaced with Excelsior)  
VAX/VMS Ada compiler system  
VAX 6310  
LARCH

---

## New Mexico

---

### New Mexico Institute of Mining and Technology

Department of Computer Science  
Program in Computer Science  
Socorro, NM 87801

**Degrees:** BS, MS, PHD

**Contact:** Prof. Andrew H. Sung  
Chairman  
(505) 835-5949  
User ID: sung@nmtvax.nmt.edu

**Update:** January 1989

**Courses:** **Software Construction (CS328)**

**Codes:** U P E O 6

**Textbooks:** *The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

**Tools:** C  
VAX 750 under UNIX

**Design and Analysis of Software Systems (CS528)**

**Codes:** G P E D 3

**Tools:** C  
VAX 750 under UNIX

**Additional Information:**

Software Construction is offered every 1 or 1 1/2 years.

---

### New Mexico State University

School of Arts and Sciences  
Department of Computer Science  
Program in Computer Science  
Las Cruces, NM 88003

**Degrees:** BS, MS, PHD

**Contact:** Prof. Juris Reinfelds  
Department Head  
(505) 646-3723

**Update:** October 1988

**Courses:** **Software Development (CS 371)**

**Codes:** U P R T 5

**Textbooks:** *Ada: An Advanced Introduction*  
by Gehani, Narain  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** Ada  
IBM PC  
Sun  
Modula-2

**University of New Mexico - Los Alamos**  
Department of Computer Science  
Los Alamos, NM 87544

**Degree:** AAS CS

**Contact:** Ms. Angela Coop  
Associate Director for Instruction  
(505) 662-5919

**Update:** July 1987

**Courses:** Introduction to Software Engineering (CS 260)

**Codes:** U P R Y 2

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** C, Unix BSD Pascal  
VAX 11/750  
Ada

**Additional Information:**

Introduction to Software Engineering is required with Fundamentals of Data Structures (CS 363) as an alternative.

## New York

---

### City University of New York

The Graduate School and University Center  
Ph.D. Program in Computer Science  
New York, NY 10036-8099

**Degrees:** PHD

**Contact:** Prof. Frank S. Beckman  
Executive Officer  
(212) 790-4594

**Update:** June 1988

**Courses:** Topics In Software Systems and Software Engineering (C.Sc. U813)  
**Codes:** X X X X 1

---

### Clarkson University

School of Science  
Department of Mathematics and Computer Science  
Potsdam, NY 13676

**Degrees:** BS, MS, PHD

**Contact:** Dr. A. S. Fokas  
Chairman  
(315) 268-2395

**Update:** February 1990

**Courses:** Software Design and Development (MA 450)

**Codes:** U N E Y 6  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Gould  
Z-100 MS DOS  
Zenith 200

**Software Tools (MA 250)**

**Codes:** U P R Y 2  
**Tools:** Turbo C  
Zenith 200

---

### Columbia University

School of Engineering and Applied Sciences  
Department of Computer Science  
New York, NY 10027

**Degrees:** BA, BS, MS, PHD

**Contact:** Dr. Gail E. Kaiser  
Associate Professor  
(212) 854-3856  
User ID: [kaiser@cs.columbia.edu](mailto:kaiser@cs.columbia.edu)

---

Network: Internet

Update: None

Courses: **Software Design Laboratory (W3152)**

Codes: U P R T 5

Tools: Standard UNIX tools available on SunOS

**Software Engineering (W4156)**

Codes: B P B Y 5

Textbooks: *Software Engineering, 3rd ed.*  
by Sommerville, Ian

**Programming Environments and Software Tools (E6123)**

Codes: G P E B 2

**Special Projects in Computer Science (W3998, E6901, others)**

Codes: B P E D 5

Tools: Tops 20  
UNIX

**Additional Information:**

Various projects in software engineering and other areas can be negotiated between 1 or more students and a faculty member. Often the projects involve a small piece of a faculty member's research and may be supervised by a Ph.D. student or research staff member.

---

**Cornell University**

School of Engineering  
Department of Computer Science  
Ithaca, NY 14853

Degrees: BS, ME, PHD

Contact: Prof. Dexter Kozen  
Graduate Fields Representative for C.S.  
(607) 255-8593

Update: October 1987

Courses: **Intro. Database Management Systems (432)**

Codes: B P E Y 6

Textbooks: *An Introduction to Database Systems*  
by Date, C.J.  
*The C Programming Language*  
by Kernighan, Brian and Ritchie, Dennis

Tools: CC  
VAX  
C, Pascal

---

**Iona College**

School of Arts and Science  
Department of Computer and Information Sciences  
Program in Computer Science  
New Rochelle, NY 10801

Degrees: BA, BS, MS

**Contact:** Dr. J. Mallozzi  
Chair of Department  
(914) 633-2578

**Update:** September 1988

**Courses:** **Software Engineering (CIS 390)**  
**Codes:** U P E Y 4  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** PL/I Optimizing, Turbo Pascal, VS Pascal  
PC & IBM mainframe  
others

**Introduction to Software Engineering (CIS 640)**  
**Codes:** G P E Y 1  
**Tools:** IBM mainframe

---

**Polytechnic University, Brooklyn Campus**  
School of Engineering  
Department of Electrical Engineering and Computer Science  
Computer Science Division  
Brooklyn, NY 11201

**Degrees:** BS CS, BS EE, MS CS, MS IS, PHD CS

**Contact:** Prof. Martin L. Shooman  
Professor

**Update:** None

**Courses:** **Software Design and Engineering (CS306)**  
**Codes:** U P E Y 1

**Software Engineering I (CS606)**  
**Codes:** G P B O 1  
**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.  
**Tools:** Software Engineering Laboratory

**Software Engineering II (CS607)**  
**Codes:** G P E B 1  
**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.  
**Tools:** Software Engineering Laboratory

**Additional Information:**

Formerly Polytechnic Institute of New York, Brooklyn Campus.  
The B.S. in E.E. is offered with Computer Engineering Option.  
Software Engineering I is offered twice a year.



---

**Polytechnic University, Farmingdale Campus**

School of Engineering  
Department of Electrical Engineering and Computer Science  
Computer Science Division  
Farmingdale, NY 11735

**Degrees:** BS CS, BS EE, MS CS, MS IS, PHD CS

**Contact:** Prof. Martin L. Shooman  
Professor

**Update:** None

**Courses:** **Software Engineering I (CS606)**

**Codes:** G P B O 1

**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.

**Tools:** Software Engineering Laboratory

**Software Engineering II (CS607)**

**Codes:** G P E B 1

**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.

**Tools:** Software Engineering Laboratory

**Additional Information:**

Formerly Polytechnic Institute of New York, Farmingdale Campus.  
The B.S. in E.E. is offered with Computer Engineering Option.  
Software Engineering I is offered twice a year.

---

**Polytechnic University, Westchester Campus**

School of Engineering  
Department of Electrical Engineering and Computer Science  
Computer Science Division  
White Plains, NY 10605

**Degrees:** BS CS, BS EE, MS CS, MS IS, PHD CS

**Contact:** Prof. Martin L. Shooman  
Professor

**Update:** None

**Courses:** **Software Engineering I (CS606)**

**Codes:** G P B Y 1

**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.

**Tools:** Software Engineering Laboratory

**Additional Information:**

Formerly Polytechnic Institute of New York, Westchester Campus.  
The B.S. in E.E. is offered with Computer Engineering Option.

---

**Rensselaer Polytechnic Institute (Entry 1)**

School of Science  
Department of Computer Science

Troy, NY 12180

**Degrees:** BS, MS, PHD

**Contact:** Prof. Arthur Sanderson

**Update:** September 1988

**Courses:** **Master's Project (66.698)**  
Codes: G N R O 16

**Software Design and Development (66.444)**

Codes: U P O Y 2

Textbooks: *Software Engineering: Planning for Change*  
by Lamb, David  
*Software Engineering Guidelines*  
by Priest et al.  
*Writing Better Computer Documentation*  
by Brockmann, R. John

Tools: MacIntosh  
PC  
Sun

**Additional Information:**

Design and Documentation and Software Leadership are proposed as part of a revised curriculum. Master's Project is a substantial software design and implementation project done under close faculty supervision. It has a schedule that is individually arranged.

---

**Rensselaer Polytechnic Institute (Entry 2)**

School of Engineering  
Department of Electrical, Computer and Systems Engineering  
Troy, NY 12180

**Degrees:** BS, ME, MS, PHD EE, PHD CSE, DENG

**Contact:** Prof. Joseph E. Flaherty  
Chairman  
(518) 276-6348

**Update:** None

**Courses:** **Software Engineering I (35.677)**

Codes: G P E Y 1

Textbooks: *Classics in Software Engineering*  
by Yourdon, Edward N.  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Software Engineering II (35.678)**

Codes: G P E Y 1

Textbooks: *Classics in Software Engineering*  
by Yourdon, Edward N.  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

---

**Rochester Institute of Technology**  
School of Computer Science

Graduate Department of Computer Science  
Rochester, NY 14623

**Degrees:** BS CS, MS CS

**Contact:** Dr. Peter Anderson  
Chairperson  
(716) 475-2529

**Update:** None

**Courses:** **Software Engineering I (ICSS-801)**  
Codes: G N E T 1  
Textbooks: *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.

**Principles of Distributed Systems (ICSA-725)**  
Codes: G X R X 1

**Principles of Data Management (ICSA-720)**  
Codes: G X R X 1

**Software Engineering Concepts (ICSA-820)**  
Codes: G X R X 1

**Analysis & Design Techniques (ICSA-821)**  
Codes: G X R X

**Program Design and Implementation (ICSA-823)**  
Codes: G X R X

**Program Testing and Reliability (ICSA-835)**  
Codes: G X R X

**Software Project Management (ICSA-830)**  
Codes: G X R X 1

**Software Project Laboratory (ICSA-894)**  
Codes: G X R X

**Software Engineering Project (ICSA-895)**  
Codes: G X R X

**Additional Information:**

An M.S. in Software Development and Management was first offered in Fall, 1987.

---

**State University of New York College at Brockport**  
School of Letters and Sciences  
Department of Computer Science  
Undergraduate Computer Science  
Brockport, NY 14420

**Degrees:** BS CS

**Contact:** Prof. Linda M. Northrop  
Assistant Professor  
(716) 395-2323  
User ID: NORTHROP@BROCK1P  
Network: BITNET

**Update:** February 1990

**Courses:** **Software Systems Development (CSC 427)**

**Codes:** U P R Y 4

**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
**Tools:** Pascal, Ada, Information  
PRIME 9955  
IBM PC

---

**State University of New York at Binghamton**

The Thomas J. Watson School of Engineering, Applied Science and Technology  
Department of Computer Science  
Binghamton, NY 13901

**Degrees:** BS CS, MS CS, PHD AT/CS

**Contact:** Dr. Thomas F. Piatkowski  
Professor  
(607) 777-4802  
User ID: tfp@bingvma.bitnet  
Network: BITNET

**Update:** February 1990

**Courses:** **Software Engineering Analysis (CS-546)**

**Codes:** G P E D 2

**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.

**Tools:** ALSYS Ada, DEC Ada  
IBM PC/AT  
VAX 780

**Software Engineering I (CS-545)**

**Codes:** G P E T 4

**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
*Software Engineering with Ada*  
by Booch, Grady

**Tools:** DEC Ada  
VAX 6340

**Software Engineering I (cross listed with CS-545) (CS-345)**

**Codes:** U P E B 5

**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
*Software Engineering with Ada*  
by Booch, Grady

**Tools:** DEC Ada  
VAX 6340

**Formal Design and Specification Methods (CS-578)**

**Codes:** G P E B 4

**Textbooks:** Selected readings

**Additional Information:**

Miscellaneous software engineering projects have been undertaken. For example, a group study produced a lengthy report on how to implement a

Master's degree in "Software and Computer Systems Engineering." Funded graduate research supports major studies of formal software methodologies, software metrics, and software design as well as the design and implementation of large software projects.

---

**State University of New York at Stony Brook**  
College of Engineering and Applied Science  
Department of Computer Science  
Stony Brook, NY 11794

**Degrees:** BS, MS, PHD

**Contact:** Prof. Peter B. Henderson  
Graduate Program Director  
(516) 632-8470

**Update:** May 1987

**Courses:** **Techniques of Software Design (MSC-520)**  
**Codes:** G N R Y 11  
**Textbooks:** *IEEE Tutorial on Software Engineering*  
by Wasserman, Anthony I. and Freeman, Peter  
*Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Berkeley UNIX Pascal  
VAXes and Sun workstations under UNIX 4.3 BSD  
CLU, Modula-2

---

**Union College**  
School of Computer Science  
Department of Electrical Engineering and Computer Science  
Schenectady, NY 12308

**Degrees:** BS, MS

**Contact:** Prof. David Hannay  
Co-Chair EE/CS Department  
(518) 370-6270

**Update:** None

**Courses:** **Software Engineering (CSC-260)**  
**Codes:** U P X Y 1  
**Textbooks:** *C Primer*  
by Hancock, L. and Krieger, M.  
*Classics in Software Engineering*  
by Yourdon, Edward N.  
**Tools:** VAX

## North Carolina

---

### Lenoir-Rhyne College

Natural Science & Math Division  
Computer Science  
Hickory, NC 28603

**Contact:** Dr. Gail Miles  
Chair and Associate Professor  
(704) 328-7268

**Update:** April 1990

**Courses:** **Software Systems Analysis and Design (CSC 400)**

**Codes:** U P R Y 4  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Excelerator  
80386 Microcomputers, Macintosh SE & II

**Senior Project - Software Engineering Option (CSC 450)**

**Codes:** U P R Y 1  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Modula-2, Ada, 4GL  
Excelerator  
VAX, Microvax, Apollo  
80386 Microcomputers and Macintosh SE & II

---

### North Carolina State University

Department of Computer Science (Undergraduate)  
Program in Computer Studies (Graduate)  
Raleigh, NC 27695

**Degrees:** BS, MS, MCS

**Contact:** Prof. K. C. Tai  
Professor  
(919) 737-7862

**Update:** May 1987

**Courses:** **Software Engineering (CSE 510)**

**Codes:** G P E Y 10  
**Textbooks:** *Software Engineering: Design, Reliability, and Management*  
by Shooman, Martin L.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Pascal/VS, UCSD Pascal  
IBM 4381 (VM/CMS)  
MicroVAX (ULTRIX)  
SAGE (UCSD p system)

**Software Engineering Project (CSC 472)**

**Codes:** U P E Y 4

Tools: Verdex C  
MicroVAX (ULTRIX)  
C and UNIX Shell

**Intro to Programming Environments (CSC 471)**

Codes: U P E Y 4  
Tools: Verdex C  
MicroVAX (ULTRIX)  
C and UNIX Shell

**Software Engineering with Ada (CSC 481)**

Codes: U P E Y 4  
Textbooks: *Software Engineering with Ada*  
by Booch, Grady  
Tools: Verdex Ada  
MicroVAX (ULTRIX)

---

**University of North Carolina at Chapel Hill**

College of Arts and Sciences  
Department of Computer Science  
Chapel Hill, NC 27599-3175

**Degrees:** MS CS, PHD CS, BS M

**Contact:** Ms. Katrina B. Coble  
Admissions and Graduate Secretary  
(919) 962-1900  
User ID: admit@cs.unc.edu  
Network: Internet

**Update:** February 1990

**Courses: Software Engineering Laboratory (Comp 145)**

Codes: B P B Y 53  
Textbooks: *IEEE Tutorial on Software Design Techniques*  
by Freeman, Peter and Wasserman, Anthony I.  
*Software Engineering Concepts*  
by Brooks, Frederick P.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
Tools: C, C++, Smalltalk, Pascal  
MacProject, Stellar, Silicon Graphics  
VAX and Sun workstations

**Software Engineering (Comp 227)**

Codes: G P R Y 5  
Textbooks: *IEEE Tutorial on Software Design Techniques*  
by Freeman, Peter and Wasserman, Anthony I.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

## North Dakota

---

**North Dakota State University**  
College of Science and Mathematics  
Department of Computer Science  
Fargo, ND 58105

**Degree:** BS, MS, PHD

**Contact:** Prof. Kenneth Magel  
Chair, Comp. Sci. and Operation Research  
(701) 237-8189  
User ID: ncmagd@ndsuvax

**Update:** October 1988

**Courses:** **Software Development (CS 513)**  
Codes: G P X Y 1  
Textbooks: *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
Tools: VAX 11/780 running Berkeley UNIX 4.3  
Zenith PCs running MS DOS 3.1

**Systems Analysis (CS 213)**  
Codes: U P X Y 1  
Tools: IBM 3081 using CMS

**System Testing and Maintenance (CS 313)**  
Codes: U P R Y 1  
Textbooks: *The Art of Software Testing*  
by Myers, Glenford  
Tools: Macintosh Pascal  
Macintosh II

**Realtime Software Design (CS 413)**  
Codes: U P R Y 1

**Additional information:**

Every undergraduate takes at least 4 courses that require substantial projects. Every graduate student takes at least 2 courses that require substantial projects. Several courses at all levels devote 2-3 weeks each to software engineering methodologies, concepts, or practices.



## Ohio

---

### **Air Force Institute of Technology**

School of Engineering  
Department of Computer Engineering  
Graduate Computer Systems  
Wright-Patterson AFB, OH 45433-6583

**Degrees:** MS, MS CE, MS EE, PHD

**Contact:** Dr. Paul D. Bailor  
Assistant Professor  
(513) 255-3576  
User ID: pbailor@galaxy@afit.af.mil  
Network: Internet

**Update:** January 1990

**Courses:** Software Project Management (AMGT553)

Codes: G N O A 3

Textbooks: Selected readings

**Systems & Software Analysis (EENG593)**

Codes: G N R T 5

Textbooks: *Modern Systems Analysis*  
by Yourdon, Edward N.  
*Software Engineering, 3rd ed.*  
by Sommerville, Ian

**Software Systems Programming Laboratory (EENG690)**

Codes: G P R A 6

**Software Environments (COSC755)**

Codes: G P E Y 5

Textbooks: Selected readings

Tools: Verdex Ada  
VAX 11/785

**Principles of Embedded Systems Software (COSC655)**

Codes: G N R Y 5

**Additional Information:**

In Software Project Management, students run assorted cost estimation programs and project scheduling software.

---

### **Bowling Green State University**

School of Arts and Sciences  
Department of Computer Science  
Bowling Green, OH 43402

**Degrees:** BS CS, MS CS

**Contact:** Dr. Barbee Mynatt  
Associate Professor  
(419) 372-2339

**Update:** November 1987

**Courses:** **Software Development (464)**  
**Codes:** B P E Y 8  
**Textbooks:** *Software Engineering with Student Project Guidance*  
by Mynatt, Barbee  
**Tools:** Teamwork, Prototyper  
VAX Station, IBM PC/AT  
Yourdon notation

**Software Engineering (564)**  
**Codes:** G P E B 5

**Human Factors in Computing (565)**  
**Codes:** G N E B 2  
**Textbooks:** *An Introduction to Human-Computer Interaction*  
by Booth  
**Tools:** Prototyper  
Hypercard  
Oasis

---

**Cleveland State University**  
James J. Nance College of Business Administration  
Department of Computer and Information Science  
Cleveland, OH 44115

**Degrees:** BS CIS, MS CIS

**Contact:** Prof. Thomas S. Heines  
Chairman  
(216) 687-4760

**Update:** November 1987

**Courses:** **Structured Systems Analysis (CIS 433)**  
**Codes:** U P E O 6  
**Textbooks:** *Structured Analysis Methods for Computer Information Systems*  
by Teague, Lavette C. and Pidgeon, Christopher

**Structured Systems Design (CIS 434)**  
**Codes:** U P E O 6  
**Textbooks:** *The Practical Guide to Structured Systems Design*  
by Page-Jones, Meilir  
**Tools:** IBM 3081  
IBM PC  
COBOL, PSL/PSA, Structured Architect, dBase III

**Software Engineering (CIS 620)**  
**Codes:** G P R O 6  
**Textbooks:** *System-370 Job-Control Language*  
by Brown, Gary D.  
*The C Programming Language*  
by Kernighan, Brian and Ritchie, Dennis  
**Tools:** IBM 3081  
VAX 11/750

**Systems Analysis and Design (CIS 634)**  
**Codes:** G P E O 6  
**Textbooks:** *The Practical Guide to Structured Systems Design*  
by Page-Jones, Meilir  
**Tools:** IBM 3081  
IBM PC

COBOL, PSL/PSA, Structured Architect, dBase III

**Additional Information:**

Structured Systems Analysis and Structured Systems Design are offered  
2-3 times per year. Software Engineering is offered 3 times per year.  
Systems Analysis and Design is offered 2 times per year.

---

**Kent State University**

School of Arts and Sciences  
Department of Mathematical Sciences  
Program in Mathematics/Computer Science  
Kent, OH 44242

**Degrees:** BS, MS, PHD

**Contact:** Prof. Michael Rothstein  
Assistant Professor  
(216) 672-2430

**Update:** May 1987

**Courses:** **Software Engineering (63251)**

**Codes:** G P E Y 6

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** C, Pascal  
VAX 750 (UNIX)

**Software Engineering Projects (43107)**

**Codes:** U P E D 3

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** UNIX

---

**Ohio State University**

Department of Computer and Information Science  
Columbus, OH 43210

**Degrees:** BS CIS, MS CIS, PHD CIS

**Contact:** Dr. Stu Zweben  
Associate Professor  
(614) 292-9526  
User ID: ZWEBEN@CIS.OHIO-STATE.EDU  
Network: Internet

**Update:** February 1990

**Courses:** **Software Engineering (CIS 757)**

**Codes:** B P E O 5

**Textbooks:** *Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.

**Tools:** Sun workstations  
IDE STP  
Pascal, C

**Systems Programming (CIS 560)**

**Codes:** U P R T 5

**Textbooks:** *Systems Software, 2nd ed.*  
by Beck  
**Tools:** Sun workstations  
IDE STP  
Pascal

**Information Systems Analysis and Design (CIS 516)**  
**Codes:** U P B T 4  
**Textbooks:** *Structured Analysis Methods for Computer Information Systems*  
by Teague and Pidgeon  
**Tools:** Sun workstations  
IDE STP

**Software Testing (CIS 788.D12)**  
**Codes:** G P E Y 2  
**Textbooks:** Selected readings

**User Interface Development (CIS 788.10F)**  
**Codes:** B P E B 4  
**Textbooks:** *Readings in Human Computer Interaction*  
by Baecker and Buxton  
**Tools:** PC, Macintosh, Sun, HP

**Revisable Software Research Project (CIS 888.Z12)**  
**Codes:** G N E T 4

**Software Engineering Project (CIS 788.12)**  
**Codes:** B P E O

**Additional Information:**

CIS 757 is offered 2 of 3 quarters per academic year.

---

**Wright State University**  
College of Engineering and Computer Science  
Department of Computer Science and Engineering  
Dayton, OH 45435

**Degrees:** BA, BS, BS CE, MS, MS CE, PHD

**Contact:** Prof. Howard V. Carson  
Assistant to the Chair  
(513) 873-2491  
User ID: cse\_dept@wright.edu  
Network: CSNET

**Update:** October 1988

**Courses:** **Software Engineering I (Software Engineering 760)**  
**Codes:** G P E Y 1  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** compiler suitable to project  
computer suitable to project  
language suitable to project

**Software Engineering II (Software Engineering 761)**  
**Codes:** G P E Y 1  
**Textbooks:** *Approaches to Prototyping*  
by Budde, Reinhard  
*Tutorial: Software Reusability*

Tools: by Freeman, Peter  
compiler suitable to project  
computer suitable to project  
language suitable to project

**Introduction to Software Engineering (Computer Engineering 460/660)**

Codes: B P R T 1

Textbooks: *Software Engineering Concepts*  
by Fairley, Richard E.  
*Software Engineering with Ada, 2nd ed.*  
by Booch, Grady

Tools: VAX Ada compiler  
DEC VAX 11/785 running VMS

**Concurrent Software Design (Computer Engineering 434/634)**

Codes: B P R T 1

Textbooks: *Advanced Programmers Guide to UNIX SYSTEM V*  
by Thomas, Rebecca and Yates, Jean  
*Operating Systems Concepts*  
by Peterson, James L. and Silberschatz, Abraham  
*The C Programming Language*  
by Kernighan, Brian W. and Ritchie, Dennis M.

Tools: C  
NCR Tower 32/600 running UNIX System V

**Additional Information:**

Data Structures and Software Design (unlisted) involves some software engineering. A local area network of 8 Sun-3 UNIX workstations with high resolution terminals, including 1 color display, were available in 1987 to provide a powerful software development environment.

## Oklahoma

---

**Rogers State College**

Computer Science Division  
Claremore, OK 74017

**Degree:** AAS CAD, AAS CET, AAS CP, AS CS

**Contact:** Prof. Clifford D. Layton  
Director, Computer Science Division  
(918) 341-7510 x286

**Update:** None

**Courses:** Software Engineering (Systems Analysis and Design) (CS 2133)  
**Codes:** X X R X 1

## Oregon

---

### Oregon State University

School of Science  
Department of Computer Science  
Program in Computer Systems  
Corvallis, OR 97331

**Degree:** BS, MS, PHD

**Contact:** Prof. Ted Lewis  
Professor  
(503) 754-3273

**Update:** None

**Courses:** **Software Design (CS 319)**

**Codes:** U P R T 1  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** IBM PC  
Macintosh  
UNIX (HP)

**Software Systems: Methodology (CS 561)**

**Codes:** G P R Y 1  
**Tools:** Macintosh  
C++, Pascal

**Software Systems: Design (CS 562)**

**Codes:** G P R Y 1  
**Tools:** Macintosh  
C++, Pascal

---

### Portland State University

School of Engineering and Applied Science  
Department of Computer Science  
Portland, OR 97207

**Degree:** BS CS, MS CS, PHD IS

**Contact:** Prof. Leonard Shapiro  
Department Head  
(503) 725-4036  
User ID: len@cs.pdx.edu  
Network: Internet

**Update:** February 1990

**Courses:** **Software Engineering (CS 454)**

**Codes:** B P E Y 4

**Testing and Verification (CS 510TV)**

**Codes:** G P E Y 2

**Software Metrics (CS 510SM)**

**Codes:** G P E Y 2

---

---

**University of Oregon**

School of Arts and Sciences  
Department of Computer and Information Science  
Eugene, OR 97403

**Degrees:** BA, BS, MA, MS, PHD

**Contact:** Prof. Alan Eliason  
Associate Professor  
(503) 686-4408  
User ID: eliason@cs.uoregon.edu

**Update:** October 1988

**Courses:** **Software Methodology I (CIS 422)**

**Codes:** U P R T 5

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** Scheme, Smalltalk  
Prototyper, RCS/UNIX  
Sun SPARC, Macintosh II, Tektronix 4300

**Software Methodology II (CIS 423)**

**Codes:** U P E O 51

**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
*The Practical Guide to Structured Systems Design*  
by Page-Jones, Meilir  
*Writing Efficient Programs*  
by Bentley, Jon Louis

**Tools:** C, RAPID, Smalltalk  
Sun SPARC, Macintosh II, Tektronix 4300

**Software Engineering (CIS 510)**

**Codes:** G N R Y 11

**Textbooks:** *Interactive Programming Environments*  
by Barstow, David R., Shrobe, Howard E., and Sandewall, Erik  
*Software Specification Techniques*  
by Gehani, Narain and McGettrick, Andrew D.

**Tools:** C, RAPID  
Sun SPARC, Macintosh II, Tektronix 4300

**Additional Information:**

Software Methodology II is offered 2 to 3 times a year.  
Other courses are offered in Expert Systems and Database Management Systems  
at the graduate level.



## Pennsylvania

---

### **Allegheny College**

Department of Computer Science  
Meadville, PA 16335

**Degrees:** BS CS

**Contact:** Robert D. Cupper  
Professor and Chair  
(814) 332-2881  
User ID: cupp@music.alleg.edu  
Network: BITNET

**Update:** January 1990

**Courses:** Introduction to Computer Science I (CS110)

Codes: U N R T 4

Textbooks: *Computer Science: An Overview*  
by Brookshear, J. Glen  
*Introduction to Computing and Computer Science with Pascal*  
by Walker, Henry M.

Introduction to Computer Science II

Codes: U P R T

Textbooks: *Second Course with Modula/2*  
by Tucker, Allen

---

### **Carnegie Mellon University (Entry 1)**

School of Computer Science  
Software Engineering  
Pittsburgh, PA 15213

**Degrees:** MSE

**Contact:** Dr. Norman Gibbs  
Professor and Director  
(412) 268-7703  
User ID: gibbs@sei.cmu.edu  
Network: Internet

**Update:** February 1990

**Courses:** Software Systems Engineering (17-711)

Codes: G N R Y

Formal Methods in Software Engineering (17-712)

Codes: G N R Y 1

Advanced System Design Principles (17-713)

Codes: G N R Y

Software Creation and Maintenance (17-721)

Codes: G N R Y 1

Analysis of Software (17-722)

Codes: G N R Y 1

**Software Project Management (17-723)**  
Codes: G N R Y 4

**Software Development Studio (17-781, 782, 783)**  
Codes: G P R Y 1

**Software Development Seminar (17-791, 792)**  
Codes: G P R Y 1

---

**Carnegie Mellon University (Entry 2)**

Mellon College of Science/School of Computer Science  
Pittsburgh, PA 15213

**Degrees:** BS M/CS, PHD CS

**Contact:** Dr. Allan Fisher  
Associate Dean for Undergrad. Education  
(412) 268-7688  
User ID: alt@visi.cs.cmu.edu  
Network: Internet

**Update:** February 1990

**Courses:** **Software Engineering (15-413)**  
Codes: U P E T 6  
Textbooks: *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
Tools: Andrew workstations  
UNIX on VAX  
Ada, C, and Lisp

**Additional Information:**  
15-413 is 1 of 4 courses, any 2 of which are  
required for the Math/CS BS degree.

---

**Cheyney University**

Arts & Sciences  
Computer & Information Sciences  
Cheyney, PA 19319

**Degrees:** BA IS

**Contact:** Prof. Jesse Williams  
Associate Professor  
(215) 399-2348

**Update:** February 1990

**Courses:** **Software Engineering Using Ada (MAS 413/513)**  
Codes: B P E D 2  
Textbooks: *Ada Language and Methodology*  
by Watt, Wichmann & Findlay  
Tools: Ada  
IBM PS/2 Model 70/486

---

**Drexel University**

College of Science  
Department of Mathematics and Computer Science  
Philadelphia, PA 19104

**Degrees:** BS CS, MS CS

**Contact:** Dr. Jeffrey L. Popyack  
Program Coordinator for Computer Science  
(215) 895-2668  
User ID: popyack@duvm  
Network: BITNET

**Update:** February 1990

**Courses:** **Software Engineering I (N677)**

**Codes:** U P R Y 6  
**Textbooks:** *Software Engineering: Planning for Change*  
by Lamb, David  
**Tools:** Lightspeed Pascal, Prime C, Sun 2.1 Modula-2  
Sun, Macintosh, PC/AT  
VDM  
Proxy

**Software Engineering II (N678)**

**Codes:** U P E Y 6  
**Textbooks:** *Software Engineering: Planning for Change*  
by Lamb, David  
**Tools:** Lightspeed Pascal, Prime C, Sun 2.1 Modula-2  
Proxy  
Sun, Macintosh, PC/AT  
VDM

**Software Engineering I (M745)**

**Codes:** G P E B 6  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** Lightspeed Pascal, Prime C, Sun 2.1 Modula-2  
Proxy  
Sun, Macintosh, PC/AT  
VDM

**Software Engineering II (M746)**

**Codes:** G P E B 6  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** Lightspeed Pascal, Prime C, Sun 2.1 Modula-2  
Proxy  
Sun, Macintosh, PC/AT  
VDM

**Topics in Software Engineering (M748)**

**Codes:** G P E D 6

---

**Lehigh University**

College of Engineering and Physical Sciences  
Department of Electrical Engineering  
Bethlehem, PA 18015

**Degrees:** BS CS, BS CE, BS EE, MS CS, MS CE, MS EE, PHD CS, PHD CE, PHD EE

**Contact:** Dr. Larry Varnerin  
Chairman  
(215) 758-4823

**Update:** May 1987

**Courses:** Software Engineering (ECE 116)  
**Codes:** U P R Y 6  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** CYBER 180 Model 850  
DEC 20 Model 2065  
Zenith Z-100 PC series

---

**Shippensburg University**

College of Arts and Sciences  
Department of Mathematics and Computer Science  
Program in Computer Science  
Shippensburg, PA 17257

**Degrees:** BS CS

**Contact:** Dr. Howard Bell  
Department Chairman  
(717) 532-1431

**Update:** September 1988

**Courses:** Software Design for Information Systems (CPS305)  
**Codes:** U P E Y 4  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** UNIX  
AT&T 3B2  
Microcomputers  
Sperry 1100  
C, FORTRAN, Pascal

---

**Temple University**

College of Engineering, Computer Sciences and Architecture  
Department of Computer and Information Sciences  
Programs in Computer Science and Information Science  
Philadelphia, PA 19122

**Degree:** BA, BS, RBA, MS, MS BA, PHD, PHD BA

**Contact:** Ms. Laurie Shteir  
(215) 787-1681

**Update:** February 1990

**Courses:** Theorem Proving and Program Verification (675)  
**Codes:** G P E X 1  
**Textbooks:** *An Introduction to the General Theory of Algorithms*  
by Machtey, M. and Young, P.  
*The Design of Well-Structured and Correct Programs*

by Alagic, Saud and Arbib, Michael A.

**Software Engineering (690)**

Codes: G N E X 3

Textbooks: *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

Tools: OPS5  
Pascal  
VMS

**Information Systems Analysis and Design (201)**

Codes: U P R T 1

Textbooks: *Elements of Systems Analysis*  
by Gore, Marvin and Stubbe, John

**Project in Information Science (301)**

Codes: U P R T 1

Tools: AT&T 3B2  
PCs

**Software Design (338)**

Codes: U P E Y 1

Textbooks: *Reliable Software Through Composite Design*  
by Myers, Glenford J.  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Structured Design*  
by Yourdon, Edward N. and Constantine, Larry L.

Tools: IBM 4381 PCs

**Additional Information:**

Business Administration programs with concentration in Computer and Information Science are offered.

---

**The Pennsylvania State University**

College of Science  
Computer Science Department  
Program in Computer Science  
University Park, PA 19802

**Degrees:** BS, MS, PHD

**Contact:** Dr. Joseph M. Lambert  
Department Head  
(814) 865-9505

**Update:** June 1987

**Courses: Software Design Methods (CMPSC 416)**

Codes: B P E Y 4

Textbooks: *Ada as a Second Language*  
by Cohen, Norman H.  
*Software Engineering*  
by Sommerville, Ian

Tools: IBM Ada  
IBM 3090

---

**University of Pennsylvania**

School of Engineering and Applied Science  
Department of Computer and Information Science  
Program in Computer Science and Engineering  
Philadelphia, PA 19104

**Degrees:** BSE

**Contact:** Dr. Norman I. Badler  
Undergraduate Chair  
(215) 898-5862

**Update:** January 1989

**Courses:** Interactive System Design (CSE 280)

**Codes:** U P E B 1

**Textbooks:** *Interactive Programming Environments*  
by Barstow, David R., Shrobe, Howard E., and Sandewall, Erik

**Tools:** Color Graphics  
IBM PC/XT/AT  
VAX 8650

---

**University of Pittsburgh**

School of Library and Information Science  
Interdisciplinary Department of Information Science  
Pittsburgh, PA 15260

**Degrees:** BS, MS, PHD

**Contact:** Dr. James G. Williams  
Chairman  
(412) 624-9418  
User ID: JIM%idis.uucp@pitt.csnet  
Network: CSNET

**Update:** June 1987

**Courses:** Information Systems Analysis, Design, and Evaluation (INF SC 272)

**Codes:** G P E O 6

**Textbooks:** *Fundamentals of Systems Analysis, 3rd ed.*  
by Fitzgerald, Jerry and Fitzgerald, Arda

**Tools:** C, COBOL, FORTRAN, Pascal  
IBM PC  
Mac  
VAX 780  
VAX 8650

**Software Engineering and Software Tools (INF SC 276)**

**Codes:** G P E O 5

**Textbooks:** *Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.

**Additional Information:**

Here are the projected schedules for the courses:

Information Systems Analysis, Design, and Evaluation

1988-89 : Winter Term

1989-90 : Fall Term

1990-91 : Fall Term

Software Engineering and Software Tools

1988-89 : Fall and Spring Terms

1989-90 : Winter Term

1990-91 : Spring Term

---

**Villanova University**

College of Liberal Arts and Sciences  
Mathematical Sciences Department  
Villanova, PA 19085

**Degrees:** BS CS, BS M, MS CS, MA M

**Contact:** Dr. Daniel Joyce  
(215) 645-7344  
User ID: djoyce@uvaxcom  
Network: BITNET

**Update:** January 1989

**Courses:** **Software Engineering (CSC 4700)**

Codes: U P R Y 4

Textbooks: *Software Engineering Concepts*  
by Fairley, Richard E.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

Tools: Logitech Modula-2/86, Turbo Pascal  
Zenith 386  
Modula-2

**Software Engineering (CSC 8540)**

Codes: G N E Y 4

Textbooks: *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Additional Information:**

One of the requirements for the Master's degree in Computer Science is writing an independent study. This often assumes the form of a major project, sometimes a group project, embodying principles of software engineering.

## South Carolina

---

### Clemson University

College of Sciences  
Department of Computer Science  
Clemson, SC 29634-1906

**Degree:** BS, BS CIS, MS, PHD CS

**Contact:** Dr. A. Joseph Turner  
Professor and Chairman  
(803) 656-3444  
User ID: turner@clemson.edu  
Network: Internet

**Update:** October 1987

**Courses:** **Software Development Methodology (CpSc 472/672)**

**Codes:** B P B T 5  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** VAX cluster with VMS & ULTRIX  
C, Modula-2, Ada, C++  
VAXset, dbx

**Design and Programming Methodology (CpSc 872)**

**Codes:** G P E T 3  
**Textbooks:** *Abstraction & Specification in Program Development*  
by Liskov & Guttag  
*Software Design: Methods and Techniques*  
by Peters, Lawrence J.  
**Tools:** some tools

**Software Verification, Validation, and Measurement (CpSc 873)**

**Codes:** G P E Y 4  
**Textbooks:** Selected readings

**Introduction to Software Development (CpSc 372)**

**Codes:** U P R T  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** VAX cluster with VMS & ULTRIX  
C, Modula-2, Ada  
VAXset, dbx

**Additional Information:**

Software Development Methodology is offered once or twice per year. Software Verification, Validation, and Measurement is offered every 2 years when demand warrants.



## Tennessee

---

### East Tennessee State University

School of Applied Science and Technology  
Department of Computer and Information Sciences  
Programs in Computer Science and Information Science  
Johnson City, TN 37614

**Degrees:** BS, MS

**Contact:** Dr. Gordon L. Bailes  
Chairman  
(615) 929-5332  
User ID: I01BAILES@ETSUACE  
Network: BITNET

**Update:** September 1988

**Courses:** **Software Engineering (222-3250)**

**Codes:** U P R A 4  
*Software Engineering: A Beginner's Guide*  
by Pressman, Roger S.  
**Tools:** Cadre's Teamwork  
IBM PS/2 50, 80 -- OS/2 and MS-DOS  
WordPerfect

**Software Design (222-5300)**

**Codes:** G N B Y 3  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** IBM PS/2  
Teamwork PCSA

**Advanced Programming Techniques (222-3310)**

**Codes:** U P R A  
**Textbooks:** *Modern Structured Analysis*  
by Yourdon, Edward N.  
*Structured Systems Design*  
by Page-Jones, Meilir  
**Tools:** IBM PS/2 50's and 80's  
Cadre's Teamwork  
Ada

**Software Specification (222-5210)**

**Codes:** G P E Y  
**Textbooks:** *The Specification of Complex Systems*  
by Cohen, Harwood, and Jackson  
**Tools:** IBM PC  
Pascal

**Software Verification and Validation (222-5220)**

**Codes:** G N B Y  
**Textbooks:** *Software System Testing and Quality Assurance*  
by Beizer, Boris  
**Tools:** none used

**Software Project Management (222-5230)**

**Codes:** G P O Y 2  
**Textbooks:** *Managing Programming People*

by Metzger, P. W.  
Selected readings  
Tools: IBM PS/2 50's and 80's  
Cadre's Teamwork  
Miscellaneous estimation and scheduling software  
WordPerfect

**Ethical Issues in the Use of Computers (222-5450)**

Codes: G N E Y 1  
Textbooks: *Computer Ethics*  
by Johnson, Deborah  
Selected readings

---

**Fisk University**

Natural Science and Mathematics  
Department of Mathematics and Computer Science  
Computer Science  
Nashville, TN 37208-3051

**Degrees:** BS CS, BS M

**Contact:** Ms. Vivian J. Fielder  
Assistant Professor

**Update:** February 1990

**Courses: Introduction to Computer Science II (CS120)**

Codes: U P R T 1  
Textbooks: *Computer Science*  
by Naeae, Douglas  
*Pascal*  
by Dale and Weems  
*Software Engineering Concepts*  
by Fairley, Richard E.  
Tools: Pascal  
VAX 11/750, IBM PC

**Special Topics - Introduction to Software Engineering (CS390)**

Codes: U P E D  
Textbooks: *Software Components & Ada: Structures, Tools, and Subsystems*  
by Booch, Grady  
*Software Engineering & Ada*  
by Booch, Grady  
*Software Engineering Concepts*  
by Fairley, Richard E.  
Tools: Pascal, Ada, C  
IBM PS/2, IBM PC, VAX 11/750 with VMS

---

**University of Tennessee at Chattanooga**

School of Engineering  
Department of Computer Science  
Chattanooga, TN 37403

**Degrees:** BS CS, MS CS

**Contact:** Dr. Jack Thompson  
Head, Computer Science

(615) 755-4329

**Update:** July 1987

**Courses:** **Software Engineering I (CpSc 350)**  
**Codes:** U P R Y 10  
**Textbooks:** *Systems Development*  
by Eliason, Alan L.  
**Tools:** Pascal  
Briefcase, Excelerator, ISPF on PCs  
IBM 4381

**Software Engineering II (CpSc 450)**  
**Codes:** U P R Y 6  
**Textbooks:** *Complete Guide to Software Testing*  
by Hetzel  
*Software Engineering*  
by Sommerville, Ian  
**Tools:** PL/I  
IBM 4381

**Software Project Management (CpSc 520)**  
**Codes:** G P E B 5  
**Textbooks:** *Controlling Software Projects*  
by DeMarco, Tom  
*Practical Project Management*  
by Page-Jones, Meiler

**Additional Information:**

Software Engineering I is offered twice per year.

---

**Vanderbilt University**  
School of Engineering  
Department of Computer Science  
Nashville, TN 37235

**Degrees:** BA, BS, MS, ME, PHD

**Contact:** Dr. Stephen R. Schach  
Associate Professor  
(615) 322-2924  
User ID: srs@vuse.vanderbilt.edu  
Network: Internet

**Update:** November 1989

**Courses:** **Software Engineering (CS 287)**  
**Codes:** B P E Y  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** Verdex Ada  
Sun 3/50, 3/80  
UNIX

**Topics in Software Engineering (CS 387)**  
**Codes:** G P E Y 2

## Texas

---

### Baylor University

College of Arts and Sciences  
Department of Engineering and Computer Science  
Computer Science  
Waco, TX 76798

**Degrees:** BA CS, BS CS, BE, MS CS

**Contact:** Dr. William B. Poucher  
(817) 755-3871  
User ID: Poucher@Baylor  
Network: BITNET

**Update:** January 1990

**Courses:** Introduction to Software Engineering (CSI4344)

**Codes:** B P B Y 4

**Textbooks:** *Software Engineering - A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

**Tools:** Anatool, Prototyper  
MacApp, MPW Pascal, Lightspeed Pascal  
Object Pascal

---

### Rice University

Department of Computer Science  
Program in Computer Science  
Houston, TX 77251-1892

**Degrees:** BA CS

**Contact:** Prof. Ken Kennedy  
Chairman  
(713) 527-4834  
User ID: ken@rice.edu

**Update:** September 1988

**Courses:** Programming Studio (COMP 310)

**Codes:** X P X Y 3

**Textbooks:** *Abstraction and Specification in Program Development*  
by Liskov, Barbara and Guttag, John

**Tools:** Powell's Modula-2 compiler on VAX, moving to C++ compiler on Sun/UNIX  
VAX 11/750  
moving to Sun 3/50

---

### Southwest Texas State University

School of Science  
Department of Computer Science  
San Marcos, TX 78666

**Degrees:** BA, BS, MA, MS

**Contact:** Dr. C. J. Hwang  
Chairman  
(512) 245-3409

**Update:** June 1987

**Courses:** **Software Engineering (CS 3398)**  
**Codes:** U P E Y 5  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** C, FORTRAN, Pascal  
VAX 8600 with VMS

**Advanced Software Engineering (CS 5398)**  
**Codes:** G P E Y 3  
**Textbooks:** *Principles of Information System Analysis and Design*  
by Mills, Linger, and Hevner  
*Software Engineering with Ada*  
by Booch, Grady  
**Tools:** VAX Ada, VAX C  
VAX 8600 with VMS

---

**St. Edward's University**  
Physical, Biological Sciences  
Computer Science  
Austin, TX 78704

**Degrees:** BA CS, BS CS

**Contact:** Dr. Barbara Boucher Owens  
Associate Professor of Computer Science  
(512) 448-8463

**Update:** February 1990

**Courses:** **Software Engineering (CS 39)**  
**Codes:** U P E Y 1  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian

---

**Stephen F. Austin State University**  
School of Business Administration  
Department of Computer Science  
Nacogdoches, TX 75962

**Degrees:** BBA, BS, MS, MS CS

**Contact:** Dr. Jarrell C. Grout  
Professor  
(409) 568-1876  
User ID: jgrout@sfaustin  
Network: BITNET

**Update:** October 1988

**Courses:** **Software Development Principles (513)**

Codes: G N E B 2  
Textbooks: *Software Engineering Concepts*  
by Fairley, Richard E.

---

**Texas Christian University**  
AddRan College  
Computer Science Department  
Master's of Software Design and Development  
Ft. Worth, TX 76129

**Degrees:** MSDD

**Contact:** Dr. James R. Comer  
Chairman  
(817) 921-7166

**Update:** February 1990

**Courses:** **Introduction to Software Design and Development (SODE 5143)**

Codes: G N R Y 9

Textbooks: *Software Engineering*  
by Pressman, Roger S.  
*Software Engineering: An Industrial Approach*  
by Radice, R. and Phillips, R.

**Ada Design and Development (SODE 6013)**

Codes: G P E D 4

Textbooks: *Software Engineering with Ada*  
by Booch, Grady  
Tools: DEC Ada  
DEC VAX 11/780

**Software Quality Assurance and Metrics (SODE 6043)**

Codes: G P E D 4

Textbooks: *Software Metrics*  
by Gilb, Tom

**Security and Privacy (SODE 6053)**

Codes: G P E D 4

Textbooks: *Foiling the System Breakers: Computer Security and Access Control*  
by Lobel, Jerome

**Modern Software Requirements and Design Techniques (SODE 6113)**

Codes: G P R Y 8

Textbooks: *Software Design: Methods and Techniques*  
by Peters, Lawrence J.  
*Structured Requirements Definition*  
by Orr, Kenneth T.

**Applied Design, Programming and Testing Techniques (SODE 6123)**

Codes: G P R Y 8

Textbooks: *Software Evolution*  
by Arthur, L.  
*The Art of Software Testing*  
by Myers, Glenford J.

**Management of Software Development (SODE 6153)**

Codes: G P R Y 8

Textbooks: *Implementing Software Engineering Practices*  
by Buckley, Fletcher

*Principles of Software Engineering Management*  
by Gilb, Tom

**Economics of Software Development (SODE 6163)**

Codes: G P R Y 8  
Textbooks: *Programming Productivity*  
by Jones, R.  
*Software Engineering Economics*  
by Boehm, Barry W.

**Effective Communications in Small Groups (SODE 6193)**

Codes: G P E D 3  
Textbooks: *Guide to Managerial Communication*  
by Munter

**Software Implementation Project I (SODE 7113)**

Codes: G P R Y 7  
Textbooks: *How to Write Macintosh Software*  
by Master, Scott  
Tools: Apple Macintosh, ANATOOLS, MACSCHEDULE,  
Prototyper, Think Pascal, MicroPlanner PLUS

**Software Implementation Project II (SODE 7123)**

Codes: G P R Y 7

**Object Oriented Programming (SODE 6023)**

Codes: B P E D

---

**Texas Tech University**

Computer Science Department  
Lubbock, TX 79409-3104

**Degrees:** BS, MS, PHD

**Contact:** Dr. Donald J. Bagert, Jr.  
Assistant Professor of Computer Science  
(806) 742-1189  
User ID: bedjb@ttacs1  
Network: BITNET

**Update:** February 1990

**Courses: Senior Project Design (CS 4411)**

Codes: U P R Y 3  
Textbooks: *CASE Using Software Development Tools*  
by Fisher, Alan S.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
Tools: Ada, Pascal (Turbo Pascal 5.5)  
Excelerator on PCs

**Senior Project Implementation Laboratory (CS 4412)**

Codes: U P R Y 3  
Textbooks: *CASE Using Software Development Tools*  
by Fisher, Alan S.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
Tools: Ada, Pascal (Turbo Pascal 5.5)  
Excelerator on PCs

**Principles of Software Development Systems (CS 5366)**

**Codes:** G P E Y  
**Textbooks:** *Programming in Ada, 3rd Edition*  
by Barnes, John Gilbert Presslie  
*Software Engineering, 3rd Edition*  
by Sommerville, Ian  
**Tools:** Ada, Pascal, C  
Excelerator/RTS on VAX and PCs

**Software Development Systems (CS 5363)**

**Codes:** G P E Y 5  
**Textbooks:** *Software Engineering, 3rd Edition*  
by Sommerville, Ian  
**Tools:** Ada, Pascal, C  
Excelerator/RTS on VAX and PCs

---

**The University of Texas at Arlington**

The College of Engineering  
Department of Computer Science Engineering  
Arlington, TX 76019

**Degrees:** BS, MS CS, MS CSE, ME CSE, PHD CS, PHD CSE

**Contact:** Dr. Paul C. Grabow  
Assistant Professor  
(817) 273-2348  
User ID: cs-grabow@uta.edu

**Update:** September 1988

**Courses: Methods in Software Engineering (CSE 4310)**

**Codes:** U P E Y 6  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
**Tools:** Pascal  
VAX 11/780

**Software Engineering (CS 5324)**

**Codes:** G P R O 6  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
**Tools:** Ada, Pascal  
VAX 11/780  
Gypsy, ISML, Prolog

**Advanced Software Engineering (CS 6324)**

**Codes:** G P E Y 6  
**Textbooks:** *Applying Software Engineering Principles with FORTRAN*  
by Marca, David  
**Tools:** Ada, Pascal  
VAX 11/780

**Software Engineering in Ada (CSE 5321)**

**Codes:** G P E O 2  
**Textbooks:** *Programming in Ada*  
by Barnes, John Gilbert Presslie



Tools: DEC Ada  
VAX 11/780

**Managing System Development (CSE 5346)**

Codes: G P E Y 1

Textbooks: *Cost Estimation for Software Development*  
by Londeix, B.  
*Principles of Software Engineering Management*  
by Gilb, T.

Tools: DEC Pascal  
VAX 8700

**Additional Information:**

Software Engineering is offered twice per year (spring and summer).  
Software Engineering in Ada is offered intermittently.

---

**The University of Texas at Austin**

College of Natural Science  
Department of Computer Science  
Austin, TX 78712

**Degrees:** BA, BS, MS, PHD

**Contact:** Dr. Laurie Werth  
Professor  
(512) 471-9535  
User ID: lwerth@cs.utexas.edu

**Update:** November 1989

**Courses: Software Engineering (CS373)**

Codes: U P E T 7

Textbooks: *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

Tools: Hypercard, MacApp/MPW, Object Pascal  
HP9000 workstations  
Macintosh  
Ada, C, Smalltalk

**Software Engineering Economics (EE 382M)**

Codes: G N E Y 4

Textbooks: *Software Engineering Economics*  
by Boehm, Barry W.  
*Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

**Additional Information:**

We integrate Software Engineering in the CS 1, CS 2 (Pascal) and Data Structures sequence at the undergraduate level.

---

**The University of Texas at Dallas**

School of Natural Sciences and Mathematics  
Program in Computer Science  
Richardson, TX 75083

**Degrees:** BS, MS, PHD

**Contact:** Dr. Simeon Ntafos

Associate Professor and Program Head  
(214) 690-2181

**Update:** None

**Courses:** **Software Engineering (CS 6354)**  
**Codes:** G N E Y 1  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Software Validation, Verification, and Performance Measurement (CS 6367)**  
**Codes:** G P E O 1

**Additional Information:**

Software Validation, Verification, and Performance Measurement is offered twice every three years.

---

**The University of Texas at El Paso**  
College of Engineering  
Computer Science Department  
El Paso, TX 79968-0518

**Degrees:** BS CS, CE, EE; MS CS, EE; PhD CE

**Contact:** Dr. Daniel Cooke  
Assistant Professor  
(915) 747-5470

**Update:** February 1990

**Courses:** **Software Engineering I (CS 3410)**  
**Codes:** U P R Y 4  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** Pascal, Prolog

**Software Engineering II (CS 3411)**  
**Codes:** U P R Y 4  
**Tools:** This is a project course. The tools and languages used vary depending upon the nature of the project.

**Software Engineering (CS 3531)**  
**Codes:** G P E Y

---

**The University of Texas at San Antonio**  
College of Science and Engineering  
Division of Mathematics, Computer Science and Systems Design  
Program in Computer Science  
San Antonio, TX 78285

**Degrees:** BS, MS

**Contact:** Dr. Barbara Boucher Owens  
Associate Professor of Computer Science  
(512) 448-8463

**Update:** None

**Courses:** **Programming Methodology (CS 3773)**  
**Codes:** U P R O 1  
**Textbooks:** *Automated Data Systems Documentation Standards*  
 by unknown  
*Software Engineering: A Practitioner's Approach*  
 by Pressman, Roger S.  
*The Elements of Programming Style*  
 by Kernighan, Brian and Plauger, P.J.  
**Tools:** IBM 4381 with CMS  
 VAX 11/780 with VMS

**Software Design (CS 5103)**  
**Codes:** G P E O 1  
**Textbooks:** *The Program Development Process: Part II: The Programming Team*  
 by Aron, Joel D.  
**Tools:** IBM 4381 with CMS

**Software Configuration Management (CS 5143)**  
**Codes:** G P E O 1  
**Textbooks:** *Software Configuration Management: An Investment in Product Integrity*  
 by Bersoff, Edward et al.

**Software Testing (CS 5133)**  
**Codes:** G P E O 1  
**Textbooks:** *The Art of Software Testing*  
 by Myers, Glenford J.  
**Tools:** VAX 11/780 with VMS

**Additional Information:**

Programming Methodology is offered in Fall and Spring semesters. Software Design, Software Configuration Management, and Software Testing are offered together in regular semester rotation. The graduate courses (5103, 5133, 5143) comprise a depth area of study for graduate students, who must develop at least 3 such areas in their course of study.

---

**University of Houston - Clear Lake**

School of Natural and Applied Sciences  
 Department of Computer Science and Information Systems  
 Program in Computer Science  
 Houston, TX 77058

**Degrees:** BA CIS, BS CS, MA CIS, MS CS

**Contact:** Dr. George C. Collins  
 Assistant Dean and Director of Student Affairs  
 (713) 488-9386

**Update:** September 1988

**Courses:** **Ada Programming Language (CSCI 3432)**  
**Codes:** U P R T 1  
**Textbooks:** *Ada as a Second Language*  
 by Cohen, Norman H.  
*Reference Manual for the Ada Programming Language*  
 by ANSI/MIL-STD-1815A  
**Tools:** VAX 11/785

**Software Design Methodologies (CSCI 4432)**  
**Codes:** U P E Y 3  
**Textbooks:** *A Unified Methodology for Developing Systems*  
 by Wallace, Stockenberg and Charette

Tools: Ada (DEC)  
VAX 11/785

**Software Design Tools (CSCI 5435)**

Codes: G P E Y 1

Textbooks: *Software Engineering*  
by Sommerville, Ian

Tools: Ada (DEC)  
VAX 11/785

**Additional Information:**

UH-CL has a strong emphasis on the engineering of computer automated systems, which includes the integration and trade-off studies of issues involving software, hardware, and people. Therefore, several research projects and these have a strong component of software engineering. In addition, two system-level courses offered annually that contain such a component are Computer Automated Systems (CTEC 4532) and Synthesis of Computer Networks (CTEC 6532).

## Utah

---

**Brigham Young University**  
College of Math and Applied Sciences  
Department of Computer Science  
Provo, UT 84602

**Degrees:** BS CS, MS CS, PHD CS

**Contact:** Prof. Scott N. Woodfield  
Associate Professor  
(801) 378-2915

**Update:** November 1987

**Courses:** **Introduction to Software Design (CS 327)**

Codes: U P R O 10

Textbooks: *Composite Structure Design*  
by Myers, Glenford J.  
*Software Engineering*  
by Sommerville, Ian

Tools: Unix (VAX, Sun Microsystems, 3B2)  
Ada, Eiffel

**Software Testing (CS 429)**

Codes: U P E O 10

Textbooks: *Software Testing Techniques*  
by Beizer, Boris

**Systems Analysis (CS 425)**

Codes: U P E O 10

Textbooks: *Structured Analysis and System Specification*  
by DeMarco, Tom  
*Structured Systems Analysis: Tools and Techniques*  
by Gane, Chris and Sarson, Trish

**Software Development and Maintenance (CS 525)**

Codes: G P E O 4

Textbooks: *IEEE Tutorial on Software Design Techniques*  
by Freeman, Peter and Wasserman, Anthony I.

**Software Management and Quality Assurance (CS 527)**

Codes: G P E O 4

Textbooks: *IEEE Tutorial: Software Configuration Management*  
by Bryan, William, Chadbourne, Christopher, and Siegel, Stan  
*Software Cost Estimation and Life-Cycle Control*  
by Putnam, Lawrence H.  
*Software Quality Assurance: A Practical Approach*  
by Chow, Tsun S.

**Theory of Software Engineering (CS 627)**

Codes: G P E O 4

**Additional Information:**

Introduction to Software Design is offered 3 times each year. Software Testing and Systems Analysis are offered once or twice per year. Software Development and Maintenance, Software Management and Quality Assurance, and Theory of Software Engineering are offered once every 3 semesters.

---

**University of Utah**

Department of Computer Science  
Salt Lake City, UT 84112

**Degrees:** MS, PHD

**Contact:** Susan Jenson  
Administrative Officer  
(801) 581-8224

**Update:** February 1990

**Courses:** **Software Engineering Laboratory (CS 451, CS 452, CS 453)**  
**Codes:** U P X X

**Software Engineering (CS 631)**  
**Codes:** B P X X

**Software Engineering (CS 632)**  
**Codes:** B P X X  
**Textbooks:** *Abstraction and Specification in Program Development*  
by Liskov, Barbara and Guttag, John  
Selected readings

---

**Utah State University**

College of Science  
Department of Computer Science  
Logan, UT 84322-4205

**Degrees:** BS, MS

**Contact:** Prof. Greg Jones  
Associate Professor  
(801) 750-3267

**Update:** October 1988

**Courses:** **Software Development/Implementation (CS 655-6)**  
**Codes:** G P E O 9

**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.

**Tools:** TeleSoft Ada  
HP 9000  
Macintosh  
PC clones  
VAX 8500

**Software Systems (CS 456)**  
**Codes:** U P R O 8  
**Textbooks:** *Software Engineering Methodology*  
by Turner, Ray  
**Tools:** VMS  
VAX 8500  
Pascal

**Additional Information:**

Software Development/Implementation is offered twice a year and Software Systems is offered 3 times each year.

## Virginia

---

**College of William and Mary**  
School of Arts and Sciences  
Department of Computer Science  
Williamsburg, VA 23185

**Degrees:** BS CS, MS CS, PHD CS

**Contact:** Dr. Robert E. Noonan  
Professor  
(804) 221-3456  
User ID: noonan@cs.wm.edu  
Network: Internet

**Update:** September 1988

**Courses:** **Software Engineering (CS 435, 535)**

**Codes:** B P E Y 1  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** Pascal, Ada, C  
T  
IBM PC-AT

**Formal Methods in Software Engineering (CS 555)**

**Codes:** G P E Y 2  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
**Tools:** Sheffield Pascal  
Primes

**Human Factors (CS 575)**

**Codes:** G P E B 5  
**Textbooks:** *Software Psychology: Human Factors in Computer and Information Systems*  
by Shneiderman, Ben  
**Tools:** Sheffield Pascal  
Primes

**Theory of Program Correctness (CS 552)**

**Codes:** G P B O 5  
**Textbooks:** *The Science of Programming*  
by Gries, David  
**Tools:** Sheffield Pascal  
Primes

**Program Testing (CS 605)**

**Codes:** G P E B 5  
**Tools:** Sheffield Pascal  
Primes

**Additional Information:**

Software Engineering and Theory of Program Correctness are offered once every 3 semesters.

---

**George Mason University**  
SITE

Information Systems & Systems Engineering  
Fairfax, VA 22030

**Degrees:** BCS, MCS, MSE, PHD CS

**Contact:** Prof. Paul Ammann  
Assistant Professor  
(703) 764-4664  
User ID: pammann@gmuvox2.gmu.edu  
Network: Internet

**Update:** February 1990

**Courses:** Formal Methods and Models In Software Engineering (CS 623)

Codes: G P R T 4

Software Construction (CS 619/SWSE 619)

Codes: G P R T

Software Design (SWSE 621)

Codes: G P R T 1

Software Project Lab (SWSE 626)

Codes: G P R T 1

Software Project Management (SWSE 625)

Codes: G P R T 1

Software Requirements and Prototyping (SWSE 620)

Codes: G P R T 1

**Textbooks:** *Science of Programming*  
by Gries, David  
Selected readings  
*Software Construction in Ada*  
by Sanden  
*Software Engineering: A Practitioner's Guide*  
by Pressman, Roger S.  
*Software Requirements: Analysis & Specification*  
by Davis  
*Tutorial: Software Engineering Project Management*  
by Thayer, Richard

**Tools:** WICOMO, COSTMODL  
SuperProject Plus

Advanced Software Requirements (SWSE 720)

Codes: G P E Y

Textbooks: Selected readings

---

**University of Virginia**

School of Engineering and Applied Science  
Department of Computer Science  
Charlottesville, VA 22903

**Degrees:** MS CS, MCS, PHD

**Contact:** Prof. Robert P. Cook  
Chairman  
(804) 924-7605

**Update:** June 1987



**Courses:** **Software Engineering Laboratory (CS 485)**  
**Codes:** U P R Y 6  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Sheffield Pascal  
Prime

**Software Engineering (CS 685)**  
**Codes:** G P E Y 6  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** AT&T C, Sheffield Pascal  
AT&T 3B5s  
Prime  
Ada

**Software Engineering (CS 885)**  
**Codes:** G N E D 1

---

**Virginia Commonwealth University**  
School of Arts and Sciences  
Department of Mathematical Sciences  
Program in Computer Science  
Richmond, VA 23284

**Degrees:** BA, BS, MA, MS

**Contact:** Dr. William E. Haver  
Department Chairman  
(804) 257-1301

**Update:** None

**Courses:** **Software Engineering (591)**  
**Codes:** B P E D 1  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** IBM 3170  
IBM PC  
IBM PC/AT  
Pyramid mini-computer network

## Washington

---

### Eastern Washington University

Mathematical Sciences & Technology  
Computer Science  
Cheney, WA 99004

**Degrees:** MCS, BCS, BS CIS, BA CSED, MED, BA M/CS

**Contact:** Prof. Ray E. Hamel  
Chair, Department of Computer Science  
(509) 359-6260

**Update:** February 1990

**Courses:** Senior Seminar (CSCD 498)  
**Codes:** U P R Y 4  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Pascal, C  
Course Builder  
MacProject, TeamWork  
Sun, PC, Macintosh

**Software Engineering (CSCD 524)**  
**Codes:** G P R Y 4

---

### Seattle University

School of Science and Engineering  
Department of Software Engineering/Computer Science  
Program in Software Engineering  
Seattle, WA 98122

**Degrees:** MSE

**Contact:** Dr. Everaldo E. Mills  
Director of Software Engineering  
(206) 296-5510  
User ID: mills%sumax.uucp@beaver.cs.washington.edu

**Update:** September 1988

**Courses:** Technical Communication (SE 508)  
**Codes:** G N R Y 9  
**Textbooks:** *The Elements of Style*  
by Strunk and White  
*Writing for the Technical Professions*  
by Trzyna, T.  
**Tools:** Encore  
Macintosh  
PCs  
C, Pascal

**Software Systems Analysis (SE 510)**  
**Codes:** G P R Y 9  
**Textbooks:** *Modern Structured Analysis*  
by Yourdon, Edward N.

---

Tools: Encore  
Macintosh  
PC  
Various languages

**System Design Methodology (SE 512)**

Codes: G P R Y 9  
Textbooks: *The Practical Guide to Structured Systems Design*  
by Page-Jones, Meilir  
Tools: Encore  
Macintosh  
PC  
Various languages

**Programming Methodology (SE 514)**

Codes: G P R Y 9  
Textbooks: *Writing Efficient Programs*  
by Bentley, Jon Louis  
Tools: Encore  
Macintosh  
PC  
Various languages

**Software Quality Assurance (SE 516)**

Codes: G P R Y 9  
Textbooks: *Testing Software Development*  
by Ould and Unwin  
*The Art of Software Testing*  
by Myers, G.  
Tools: Encore  
Macintosh  
PC  
Various languages

**Software Metrics (SE 518)**

Codes: G P R Y 9  
Textbooks: *Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.  
Tools: Encore  
Macintosh  
PC  
Various languages

**Software Project Management (SE 531)**

Codes: G P R Y 9  
Textbooks: *Dynamic Project Management: A Guide for Managers and Engineers*  
by Kezborn & Schilling  
*Managing a Programming Project*  
by Metzger, P.  
Tools: Encore  
Macintosh  
PC  
Various languages

**System Procurement and Contract Acquisition (SE 533)**

Codes: G P E Y 9  
Textbooks: *Data Processing Contracts: Structure, Contents, and Negotiations*  
by Brandon, Dick H. and Segelstein, S.  
Tools: Encore  
Macintosh  
PC  
Various languages

**Formal Methods (SE 543)**

Codes: G P R Y 9

Textbooks: *Structured Programming : Theory and Practice*  
by Linger, Richard C., Mills, Harlan D., and Witt, Bernard I.

**Human Factors In Computing (SE 560)**

Codes: G P E Y 9

Textbooks: *Designing the User Interface*  
by Schneiderman, B.  
*Elements of Friendly Software Design*  
by Heckel, P.

Tools: Encore  
Macintosh  
PC  
Various languages

**Data Security and Privacy (SE 562)**

Codes: G P E Y 9

Textbooks: *Security, Accuracy, and Privacy in Computer Systems*  
by Martin, James

Tools: Encore  
Macintosh  
PC

**Software Engineering Project 1, 2, 3 (SE 585, SE 586, SE 587)**

Codes: G P R Y 9

Tools: Varies by project

**Special Topics (SE 591, SE 592, SE 593)**

Codes: G P E D 9

Textbooks: Varies by topic

Tools: Varies by topic

**Independent Study (SE 596, SE 597, SE 598)**

Codes: G P E D 9

Textbooks: Varies by topic

Tools: Varies by topic

**Additional Information:**

At Seattle University, Software Engineering is viewed as an academic/professional discipline, which has its principal academic basis in computer science. Thus, the following graduate courses in computer science are also offered as technical electives in the MSE program:

ESW 500 Information Structures and Algorithms  
ESW 501 Computer Systems Principles  
ESW 541 Database Systems  
ESW 551 Distributed Computing  
ESW 553 Artificial Intelligence  
ESW 564 Computer Graphics  
ESW 566 Real Time Systems

---

**University of Washington**

College of Arts and Sciences  
Department of Computer Science  
Seattle, WA 98195

**Degree:** BS CS, MS CS, PHD CS

**Contact:** Prof. Richard E. Pattis

Assistant Professor  
(206) 545-3798  
User ID: pattis@cs.washington.edu

**Update:** October 1988

**Courses:** **Software Engineering (CSci 503)**  
**Codes:** G P E Y 3  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
**Tools:** Turbo Pascal, UNIX C, Xerox XDE  
IBM PC/AT  
MicroVAX II  
VAX 8550  
Xerox Dandelion  
Mesa

---

**Washington State University**  
College of Sciences and Arts  
Department of Computer Science  
Pullman, WA 99164

**Degrees:** BS, MS, PHD

**Contact:** Dr. David B. Benson  
Professor  
(509) 335-2706

**Update:** None

**Courses:** **Software Development (CptS 422)**  
**Codes:** U P E Y 1  
**Textbooks:** *C: An Advanced Introduction*  
by Gehani, Narain  
*Introducing the UNIX System*  
by McGilton, Henry and Morgan, Rachel  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
*The UNIX C Shell Field Guide*  
by Anderson, Gail and Anderson, Paul  
**Tools:** UNIX systems

**Software Development Lab (CptS 423)**  
**Codes:** U P E Y 1  
**Textbooks:** *C By Dissection: The Essentials of C Programming*  
by Kelley, Al and Pohl, Ira  
*Introducing the UNIX System*  
by McGilton, Henry and Morgan, Rachel  
**Tools:** UNIX systems

**Verification (CptS 522)**  
**Codes:** G P E Y 1  
**Textbooks:** *The Science of Programming*  
by Gries, David

**Additional information:**

Research opportunities in system software engineering, software test concepts, distributed computing concepts, especially theory are available.

## West Virginia

---

### West Virginia College of Graduate Studies (WVCOGS)

Engineering and Science Division  
Information Systems  
Institute, WV 25112

**Degrees:** MS

**Contact:** Prof. Robert N. Hutton  
Associate Professor

**Update:** May 1987

**Courses:** **Systems Analysis Techniques (IS 605)**

**Codes:** G N R Y 5

**Textbooks:** *Structured Analysis*  
by Yourdon, Edward N.

**System Design (IS 610)**

**Codes:** G P R Y 6

**Textbooks:** *Computer Information Systems Development: Design and Implementation*  
by Adams, Powers, and Mills

**Tools:** VM/CMS  
VAX

**Software Engineering Principles (IS 625)**

**Codes:** G P E Y 4

**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady

**Tools:** VAX Ada

**Ada Programming (IS 525)**

**Codes:** B N E Y 4

**Textbooks:** *Programming in Ada*  
by Barnes, John Gilbert Presslie

**Tools:** VAX Ada

---

### West Virginia University

Department of Statistics and Computer Science  
Program in Computer Science  
Morgantown, WV 26506

**Degrees:** BS, MS, PHD

**Contact:** Dr. Donald F. Butcher  
Professor and Chairman  
(304) 293-3607  
User ID: dfb@b.cs.wvu.wvnet.edu  
Network: Internet

**Update:** February 1990

**Courses:** **Software Engineering (CS 275)**

**Codes:** U P E Y 2

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** VAX

## Ada

### Ada with Software Engineering (CS 291/391)

Codes: E P E Y 3  
Textbooks: *Software Engineering with Ada*  
by Booch, Grady  
Tools: Digital Ada  
VAX 11/780 under VMS

### Principles of Software Development (CS 170)

Codes: U P E Y 5  
Tools: PL/I optimizing compiler on VAX PL/I  
PL/I optimizing compiler in IBM  
IBM 3081  
VAX 11/780  
PL/I and system utilities

### Software Engineering in Data Communications (CS 350)

Codes: G P E Y 4  
Tools: ALSYS Ada, IBM PC Assembler, Lattice C, RT-11 Assembler, VAX  
UNIX C  
IBM PC/AT  
IBM PC/XT  
IBM PCs  
PDP 11/23s  
VAX 11/750  
Assembly

### Systems Analysis (CS 270)

Codes: U P E Y  
Textbooks: *Modern Structured Analysis*  
by Yourdon, Edward N.

### Additional Information:

Courses numbered 0-99 are Freshman and Sophomore level courses. Courses numbered 100-299 are Junior and Senior level courses. Up to 4 200-level courses may count as credit towards the MS degree for graduate students. Courses numbered 300-399 are MS level courses, and courses numbered 400-499 are Ph.D. level courses. All 200-level courses have CS 1, 2, 50 and 51, a year of calculus, and a course in discrete mathematics as prerequisites.



## Wisconsin

---

### **Marquette University**

College of Engineering  
Department of Electrical and Computer Engineering  
Program in Electrical Engineering  
Milwaukee, WI 53233

**Degrees:** BS EE, MS EE, PHD EE

**Contact:** Dr. Russell J. Niederjohn  
Professor and Chairman  
(414) 224-6820  
User ID: NIEDERJOHN@MUCSD  
Network: BITNET

**Update:** February 1990

**Courses:** Software Engineering (EECE-211)  
**Codes:** G N E T 11  
**Tools:** Pascal  
VAX

### **Additional Information:**

Other courses on compilers, advanced software, database, operating systems, and architecture are offered.

---

### **University of Wisconsin-Madison**

College of Engineering  
Department of Industrial Engineering  
Madison, WI 53706

**Degrees:** MS, PHD

**Contact:** Prof. M. Smith  
Department Chairman  
(608) 262-3768

**Update:** October 1987

**Courses:** Computer Methods in Industrial Engineering (490-612-9)  
**Codes:** G N B Y 9  
**Textbooks:** Selected readings  
**Tools:** Turbo Pascal  
IBM PC

---

### **University of Wisconsin-Milwaukee**

School of Engineering and Applied Science  
Department of Electrical Engineering and Computer Science  
Milwaukee, WI 53201

**Degrees:** BS, MS, PHD

**Contact:** Dr. K. Vairavan  
Chair, Computer Science

(414) 229-5183  
User ID: ku@cs.uwm.edu  
Network: Internet

**Update:** June 1988

**Courses:** **Introduction to Software Engineering (262-536)**  
**Codes:** B P R O 8  
**Textbooks:** *Software Engineering, A Practical Approach*  
by Pressman, Roger S.  
*Software Engineering in C*  
by Darnell, Peter A. and Margolis, Philip E.  
**Tools:** 68000 based, VAX 11/750, MicroVAX 2000 running X11

**Software Engineering Laboratory (262-438)**  
**Codes:** B P E Y 1  
**Textbooks:** None -- project based course  
**Tools:** VAX 11/750, 68000 based, MicroVAX 2000  
UNIX/C under X11

**Additional Information:**

262-536 Introduction to Software Engineering is offered twice/year.

---

**University of Wisconsin-Stout**

Mathematics Department  
Applied Mathematics / Concentration in Software Development  
Menomonie, WI 54751

**Degrees:** BS M

**Contact:** Prof. Bruce W. Johnston  
Professor of Computer Science  
(715) 232-2481  
User ID: Johnston@uwstout  
Network: BITNET

**Update:** February 1990

**Courses:** **Software Engineering (354-448)**  
**Codes:** U P B T 6  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
*Software Engineering with Ada*  
by Booch, Grady  
**Tools:** VAX and Zenith 286 PCs running Ada with Telesoft and Meridian compilers

## Wyoming

---

### University of Wyoming

College of Arts and Sciences  
Computer Science Department  
Program in Computer Science  
Laramie, WY 82071

**Degrees:** BS CS, BA CS, BS MIS, MS CS, PHD CS

**Contact:** Prof. John Rowland  
(307) 766-6475

**Update:** September 1988

**Courses:** **Software Engineering (COSC 684)**

**Codes:** B P O B 1

**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Tools:** Ada on VAX 8800  
PC  
VAX 11/785  
VAX 8800

**Software Engineering Management (COSC 884)**

**Codes:** G P O B 1

**Textbooks:** *Managing the Software Process*  
by Humphrey, W.S.

**Tools:** Ada  
VAX 8800

**Software Engineering Laboratory (COSC 685)**

**Codes:** B P O B 1

**Software Management Laboratory (COSC 885)**

**Codes:** G P E B

**Additional Information:**

COSC 885 Software Management Laboratory is pending. It would be operated jointly with the Software Engineering Laboratory; members of this class would act as team leaders.

---

# Australia

## Victoria

---

**Royal Melbourne Institute of Technology**  
Information Technology Division  
Melbourne, VC 3001 Australia

**Degrees:** BS CS, MS CS

**Contact:** Prof. Anthony Y. Montgomery  
Head  
660-2943  
User ID: aym%goanna.oz@uunet.uu.net

**Update:** March 1990

**Courses:** **Software Engineering 1 (CS280)**  
Codes: U X R X 1

**Software Engineering 2 (CS381)**  
Codes: U X E X 1  
Textbooks: *Models and Measurements for Quality Assessment of Software*  
by Mohanty, S.N.

**Software Engineering 3 (CS 387)**  
Codes: U X E X 1  
Textbooks: *The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.



## Canada

### Alberta

---

#### The University of Alberta

School of Science  
Department of Computing Science  
Edmonton, AB T6G 2H1 Canada

**Degrees:** BS, MS, PHD

**Contact:** Dr. Paul Sorenson  
Chairman

**Update:** December 1989

**Courses:** **Software Engineering (CMPUT 401)**  
**Codes:** U P R T 4  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Modula-2, Pascal  
Macintosh  
Sun workstations (UNIX OS)

**Interactive Programming Environments (CMPUT 652)**  
**Codes:** G P E B 3  
**Textbooks:** *Interactive Programming Environments*  
by Barstow, David R., Shrobe, Howard E., and Sandewall, Erik  
**Tools:** Cornell program synthesizer generator, Smalltalk  
VAX systems (UNIX OS)

**Software Testing (CMPUT 501)**  
**Codes:** G P E B 3  
**Textbooks:** *Computer Program Testing*  
by Chandrasekaran, B. and Radicchi, Sergio  
*Software Testing Techniques*  
by Beizer, Boris  
**Tools:** VAX systems (UNIX OS)

**Specification and Verification (CMPUT 508)**  
**Codes:** G P E Y 3  
**Textbooks:** *Communicating Sequential Processes*  
by Hoare, C.A.R.  
*The Logic of Programming*  
by Hehner, E.C.  
*The Science of Programming*  
by Gries, David  
**Tools:** VAX computer systems (UNIX OS)  
Various specification languages

## British Columbia

---

### University of Victoria

School of Arts and Sciences  
Department of Computer Science  
Victoria, BC V8W 2Y2 Canada

**Degrees:** BS, MS

**Contact:** Dr. Daniel Hoffman  
Assistant Professor  
(604) 721-7222

**Update:** June 1987

**Courses:** Software Engineering (CSC 365)

**Codes:** U P R T 6

**Textbooks:** *The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.

**Tools:** C, Pascal on UNIX 4.2  
Pyramid  
VAX 11/780

**Implementation of Software Engineering Methods**

**Codes:** B P E Y 3

**Tools:** C  
Pyramid  
Sun  
VAX

**Additional information:**

Software Engineering/Education Cooperative Project is a joint project with IBM Canada. It's aim is to advance the state of the art in educational software.



## Nova Scotia

---

### **Acadia University**

Jodrey School of Computer Science  
Department of Computer Science  
Wolfville, NS B0P 1X0 Canada

**Degrees:** BCS, MS

**Contact:** Dr. Leslie H. Oliver  
Professor and Director  
(902) 542-2201 x331  
User ID: oliver@acadiau.ca  
Network: BITNET

**Update:** October 1988

**Courses:** **Software Engineering** (Comp 3653)

**Codes:** U P B Y 4

**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.

**Tools:** Turbo Pascal, UNIX C  
PC-Compatible  
Sun  
Excelerator

### **Additional Information:**

Acadia University also offers degrees in BCSH, BCSS Software, and BCSS Business Data Processing.

## Ontario

---

### Queen's University

Faculty of Arts and Science  
Department of Computing and Information Science  
Kingston, ON K7L 3N6 Canada

**Degree:** BS, MS

**Contact:** Dr. David A. Lamb  
Assistant Professor  
(613) 545-6067  
User ID: dalamb@qucis.wiscvm  
Network: BITNET

**Update:** June 1987

**Courses:** **Modules and Specifications (CISC 322)**  
Codes: U P E Y 2

**Software Engineering (CISC 422/CISC 838)**  
Codes: B P E Y 4  
Textbooks: *Software Engineering: Planning for Change*  
by Lamb, David  
Tools: IBM Pascal/VS  
IBM 3081 under VM/CMS

#### Additional Information:

As a senior thesis, computing majors take CISC-499, a course where (working by themselves, supervised by a faculty member) they complete a substantial programming project.

---

### University of Ottawa

Faculty of Science  
Department of Computer Science  
Program in Computer Science  
Ottawa, ON K1N 9B4 Canada

**Degree:** BS, MCS

**Contact:** Dr. H. Ural  
Associate Professor  
(613) 564-5092  
User ID: HURSL@UOTTAWA  
Network: BITNET

**Update:** October 1988

**Courses:** **Software Engineering I (CSI 3111)**  
Codes: U P R Y 4  
Textbooks: *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
Tools: Pascal, Ada, Prolog

**Software Engineering II (CSI 4112)**

Codes: U P R Y 6  
Textbooks: *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
Tools: VAX 750  
C, Ada

**Software Testing: Theory and Practice (CSI 5111)**

Codes: G N E Y 7  
Textbooks: Selected readings

**Software Engineering (CSI 5112)**

Codes: G N E Y 5  
Textbooks: Selected readings  
Tools: VAX 750  
Modula II, Ada

**Additional Information:**

The University of Ottawa also offers the following programs:  
B.Sc. Major and Honours with General Computer Science  
B.Sc. Major and Honours with Information and Management System  
Software Engineering (offered in the Winter and Summer terms)  
Software Engineering I (offered twice a year)

courses in Ada (Ada Language Concepts, CSI 2161) and Modula-2  
(Modula-2 Language Concepts, CSI 2169) are also offered.

---

**University of Waterloo**

Faculty of Mathematics  
Department of Computer Science  
Waterloo, ON N2L 3G1 Canada

**Degrees:** BM, MM, PHD

**Contact:** Dr. David Taylor  
(519) 888-4432  
User ID: dtaylor@saugeen.waterloo.edu

**Update:** October 1988

**Courses: Applications Software Engineering (CS 430)**

Codes: U P E Y 1  
Textbooks: *Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.

**Business System Analysis (CS 432)**

Codes: U P E O 1  
Textbooks: *Information Systems Analysis: With an Intro to 4th Generation Technologies*  
by Hall, V.J. and J.W. Mosevich  
Tools: IBM PC

**Software System Design and Implementation (CS 446 and CS 646)**

Codes: B P E T 1  
Textbooks: *Software Engineering: A Practitioner's Approach, 2nd ed.*  
by Pressman, Roger S.

**Techniques in Systems Analysis (CS 482)**

Codes: U P E T 1  
Textbooks: *Information Systems Analysis: With an Intro to 4th Generation Technologies*

by Hall, V.J. and J.W. Mosevich

**Additional Information:**

Applications Software Engineering and Techniques in Systems Analysis are offered in the Fall and Spring terms.

## Quebec

---

### Concordia University

Faculty of Engineering and Computer Science  
Department of Computer Science  
Montreal, PQ H3G 1M8 Canada

**Degrees:** BCS, MCS, PHD

**Contact:** Prof. Pankaj Goyal  
Associate Professor  
(514) 848-3018

**Update:** March 1990

**Courses:** **Software Engineering (COMP 354)**  
**Codes:** U P R T 2  
**Textbooks:** *Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Sun-C, Sun-Pascal  
Sun workstations (network)

**Additional Information:**

We offered an Ada-Language Laboratory during the 1987-88 academic year.  
Several compilers were under evaluation.

---

### McGill University

School of Computer Science  
Montreal, PQ H3A 2K6 Canada

**Degrees:** MS, PHD

**Contact:** Prof. Nazim H. Madhavji  
Professor  
(514) 398-7073

**Update:** None

**Courses:** **Advanced Topics (Software Engineering) (308-762A)**  
**Codes:** G P E Y 5  
**Textbooks:** *Software Development: A Rigorous Approach*  
by Jones, C.B.  
*Software Engineering*  
by Sommerville, Ian  
*Software Engineering Environments*  
by Hunke, H.  
*Software Engineering with Modula-2 and Ada*  
by Wiener, Richard and Sincovec, Richard  
**Tools:** Cambridge Modula-2, Modula-2/68, Powell Modula-2  
Sun 3  
VAX 11/780

**Advanced Topics (Programming Environments) (308-767B)**  
**Codes:** G P E Y 3  
**Textbooks:** *Interactive Programming Environments*  
by Barstow, David R., Shrobe, Howard E., and Sandewall, Erik  
**Tools:** Cambridge Modula-2, Modula-2/68, Powell Modula-2

Sun 3  
VAX 11/780

**Additional information:**

The School offers research study (M.Sc. and Ph.D.) in software engineering as well as offering software engineering projects for masters students.

---

**University of Quebec at Montreal**

Computer Science  
Departement of Mathematics and Computer Science  
Montreal, QC H3C 3P8 Canada

**Degrees:** PHD M/CS, MS M/CS/CIS, BS M/CS/CIS

**Contact:** Dr. Philippe J. Gabrini  
Head, Computer Science Section  
(514) 987-3087  
User ID: R23414@VQAM.bitnet  
Network: BITNET

**Update:** March 1990

**Courses:** **Software Engineering (INF 5050)**  
**Codes:** U P R B 5  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** Modula-2  
Sun workstations, PCs

**Software Engineering I (INF 7410)**  
**Codes:** G N E Y 4  
**Textbooks:** Selected readings  
**Tools:** Modula-2  
CASE tools

**Software Engineering II (INF 7420)**  
**Codes:** G N E Y 4  
**Textbooks:** Selected readings  
**Tools:** Modula-2  
CASE tools

## Saskatchewan

---

### University of Regina

Faculty of Science  
Department of Computer Science  
Regina, SK S4S 0A2 Canada

**Degrees:** BA, BS, MS

**Contact:** Dr. R. B. Maguire  
Department Head  
(306) 584-4632

**Update:** October 1988

**Courses:** **Business Information Systems (CS 270)**

**Codes:** U P R T 11

**Textbooks:** *Elements of Systems Analysis, 4th ed.*  
by Gore, Marvin and Stubbe, John W.

**Tools:** IBM PC AT  
Excelerator InTech

**Advanced Systems Analysis and Design (CS 372)**

**Codes:** U P E Y 4

**Textbooks:** *Introduction to Systems Analysis and Design: A Structured Approach*  
by Kendale, Penny A.

**Tools:** UNIX C  
Berkeley 4.2 UNIX on VAX 750  
C programming language

**Project Management for Data Processing Applications (CS 373)**

**Codes:** U P E T 5

**Textbooks:** *Managing Computer Resources, 2nd ed.*  
by Hussain and Hussain

**Advanced Topics in System Software (CS 430)**

**Codes:** U P E O

**Textbooks:** *Distributed Databases, Principles & Systems*  
by Stefano, Ceri, Giuseppe and Pelagatti

**Advanced Topics in Database Systems (CS 470)**

**Codes:** U P E Y

**Textbooks:** *An Introduction to Database Systems, 3rd ed.*  
by Date, C.J.

**Tools:** INGRES, DB2/SQL

**Introduction to Database Systems and Document Storage and Retrieval (CS 375)**

**Codes:** U P E T

**Textbooks:** *The Database Book*  
by Loomis, Mary E.S.

**Tools:** INGRES

**Additional Information:**

CS 430 is offered every other year.





## Mexico

---

**Instituto Tecnológico y de Estudios Superiores de Monterrey**  
Graduates and Research  
Informatics Graduate Program  
Monterrey, NL 64849 Mexico

**Degrees:** MS

**Contact:** Dr. Carlos Scheel  
58-20-00 x5011  
User ID: SCHEEL@TECMTYVM  
Network: BITNET, Internet

**Update:** March 1990

**Courses:** **Software Engineering (SI-151)**  
**Codes:** G P R Y 4  
**Textbooks:** *Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*Software Engineering Concepts*  
by Fairley, Richard E.  
**Tools:** Modula-2, C, 4th Dimension  
VAX, MICRO-VAX, IBM 4381  
IBM PS/2 Model 50/80  
ALTOS

**Advanced Programming Techniques (SI-150)**  
**Codes:** G P R Y 4  
**Textbooks:** *Fourth Generation Languages, vol. I-III*  
by Martin, James  
*Interactive Programming Environments*  
by Barstow and Shrobe  
**Tools:** Oracle, Linc, IEW  
VAX 3681, UNISYS A3, IBM 4381

**Programming Design (CB-150)**  
**Codes:** G N R B 4  
**Textbooks:** *Programming by Design*  
by Miller and Miller  
*Software Tools in Pascal*  
by Kernighan, Brian and Plauger  
**Tools:** Pascal, C  
IBM PS/2 Model 50/80  
IBM 4381

**Information Engineering (SI-154)**  
**Codes:** G P R Y 1  
**Textbooks:** *Information Engineering*  
by Martin, J. and Finkelstein, C.  
*Strategic Data-Planning Methodologies*  
by Martin, J.  
**Tools:** C, Pascal, Oracle  
IBM 4381, IBM PS/2 Model 50/80  
VAX



# United Kingdom

## Scotland

---

### University of Stirling

Department of Computing Science  
Stirling, SL FK9 4LA United Kingdom

**Degrees:** BS, MS

**Contact:** Dr. David Budgen  
(44) 786 73171  
User ID: db@uk.ac.stir.cs  
Network: JANET

**Update:** March 1990

**Courses:** **Software Engineering (31W7)**

**Codes:** U N B Y 7

**Textbooks:** *Software Engineering, 3rd Edition*  
by Sommerville, Ian  
*The Craft of Software Engineering*  
by Macro, Allen and Buxton, John  
*The Mythical Man-Month: Essays on Software Engineering*  
by Brooks, Frederick P.  
**Tools:** CASE Tools: Teamwork

**Formal Specification (SE2)**

**Codes:** G N R Y 3

**Textbooks:** *Introduction to Discrete Mathematics for Software Engineering*  
by Denvir, Tim  
**Tools:** 3B15 Computer  
HP Unix Workstations

**Additional Information:**

Our degree programmes are fairly structured, and so we can put a software engineering bias into many of the course units that are not specifically concerned with software engineering themes (e.g., the course unit on concurrency). The two course units listed are those that concentrate on specific areas of software engineering itself.

---

### University of Strathclyde

Faculty of Science  
Department of Computer Science  
Program in Computer Science  
Glasgow, SL G1 1XH United Kingdom

**Degrees:** BCS, B IE

**Contact:** Dr. Robin B. Hunter

**Update:** April 1990

**Courses:** **Software Engineering (52.302)**

**Codes:** U P R Y 7

**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** Pascal  
Sequent  
Ada

**Systems Analysis and Design (52.304)**

**Codes:** U N R Y 16  
**Textbooks:** *Basic Systems Analysis*  
by Daniels, Alan and Yeates, Donald  
*Information Systems Design*  
by Brookes, Cyril H. P.  
*Software Engineering with Systems Analysis and Design*  
by Steward, Donald V.  
*Systems Analysis and Design: A Structured Approach*  
by Davis, William S.  
*Systems Analysis and Design for Computers*  
by Millington, Ellis, Horwood

**Software Engineering (52.415)**

**Codes:** U P E Y 6  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian

**Formal Methods (52.415)**

**Codes:** U N E Y 11  
**Textbooks:** *Program Verification Using Ada*  
by McGettrick, Andrew D.  
**Tools:** Sequent  
Ada/Anna

**Systems Design**

**Codes:** G N R Y 6  
**Textbooks:** *Introduction to Systems Analysis and Design: A Structured Approach*  
by Kendall, Penny A.  
**Tools:** Turbo Pascal  
IBM PC

**Software Engineering**

**Codes:** G N E Y 6  
**Textbooks:** *Software Engineering*  
by Sommerville, Ian  
**Tools:** Ada, Pascal

# REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED			1b. RESTRICTIVE MARKINGS NONE		
2a. SECURITY CLASSIFICATION AUTHORITY N/A			3. DISTRIBUTION/AVAILABILITY OF REPORT APPROVED FOR PUBLIC RELEASE DISTRIBUTION UNLIMITED		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A					
4. PERFORMING ORGANIZATION REPORT NUMBER(S)  CMU/SEI-90-TK-4			5. MONITORING ORGANIZATION REPORT NUMBER(S)  ESD-TR-90-206		
6a. NAME OF PERFORMING ORGANIZATION  SOFTWARE ENGINEERING INSTITUTE		6b. OFFICE SYMBOL (If applicable)  SEI	7a. NAME OF MONITORING ORGANIZATION  SEI JOINT PROGRAM OFFICE		
6c. ADDRESS (City, State and ZIP Code) CARNEGIE MELLON UNIVERSITY PITTSBURGH, PA 15213			7b. ADDRESS (City, State and ZIP Code) ESD/XRS1 HANSCOM AIR FORCE BASE, MA 01731		
8a. NAME OF FUNDING/SPONSORING ORGANIZATION  SEI JOINT PROGRAM OFFICE		8b. OFFICE SYMBOL (If applicable)  SEI JPO	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER  F1962885C0003		
8c. ADDRESS (City, State and ZIP Code) CARNEGIE MELLON UNIVERSITY SOFTWARE ENGINEERING INSTITUTE JPO PITTSBURGH, PA 15213			10. SOURCE OF FUNDING NOS.		
			PROGRAM ELEMENT NO.  N/A	PROJECT NO.  N/A	TASK NO.  N/A
11. TITLE (Include Security Classification) Software Engineering Education Directory					
12. PERSONAL AUTHOR(S) Bill Mc Steen, Brian Gottier, Mark Schmick					
13a. TYPE OF REPORT FINAL		13b. TIME COVERED FROM _____ TO _____		14. DATE OF REPORT (Yr., Mo., Day) April, 1990	
15. PAGE COUNT 166					
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB. GR.			
19. ABSTRACT (Continue on reverse if necessary and identify by block number)  The directory provides information about software engineering courses and software engineering degree programs offered by universities, primarily in the United States.					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS <input checked="" type="checkbox"/>			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED, UNLIMITED		
22a. NAME OF RESPONSIBLE INDIVIDUAL KARL SHINGLER			22b. TELEPHONE NUMBER (Include Area Code) (412) 268-7630		22c. OFFICE SYMBOL SEI JPO